CLINICAL SPECTRUM OF NON VENEREAL GENITAL DERMATOSES IN A DERMATOLOGY CLINIC OF A REFERRAL HOSPITAL

DISSERTATION

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CERTIFICATE

This is to certify that this dissertation entitled **"CLINICAL SPECTRUM OF NON VENEREAL GENITAL DERMATOSES IN A DERMATOLOGY CLINIC OF A REFERRAL HOSPITAL"** is a bonafide work done by Dr.P.NITHYA, Postgraduate student of Department of Dermatology,Venereology and Leprosy , Chengalpattu Medical College, Chengalpattu – 603 001 during the academic year 2009 – 2012 for the award of degree of M.D. (Dermatology, Venereology and Leprosy) – Branch XX. This work has not previously formed the basis for the award of any Degree or Diploma.

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CONTENTS

INTRODUCTION

The diseases that affect the genitalia are unique. It is classified into venereal and non venereal diseases. The term non venereal used to designate large group of disorders involving the genitalia not transmitted sexually. Because venereal and non-venereal dermatoses tend to be confused, the occurrence of these dermatoses may be associated with mental distress and guilt feelings in affected patients. However, careful dermatological history taking, a complete cutaneous examination and sometimes a skin biopsy usually allow accurate diagnosis and satisfactory medical and surgical management in most cases.

A number of dermatoses and skin tumours affect the genitalia in an unique (or) distinct manner that they warrant separate discussion. The normal characteristics of common dermatoses are modified on genitals. For most of them this may be the only one of the many sites involved while in others it may be predominantly confined to the genitalia. The features are frequently modified by moisture in local environment.

The genital area differs between the sexes being the good example of regional human variation. There is a considerable variability in size, shape, pigmentation and amount of hair distribution. Moreover, perineal area is plentifully endowed with functional eccrine, non-functional apocrine sweat glands and holocrine sebaceous glands usually in association with hair follicles but also occurring as free glands(Tyson's glands) around the coronal sulcus.

In males natal cleft, perianal skin, distal penile shaft, prepuce and glans penis are devoid of hair. Circumcision can alter the incidence and appearance

of dermatoses on the glans and corona. The pattern of keratinisation of the epithelium also differs throughout the anogenital area. This is most marked at the mucosal junctions, the prepuce, distal penile shaft and the glans. Rugosity and thin skin of scrotum allows excellent penetration of topical agents. In females vulva is the anterior portion of perineum within it are the clitoris, urethra and vagina. Vulva itself is subdivided into mons pubis, labia majora and labia minora. Medial aspect of labia majora is smooth and hairless with numerous sebaceous glands. Vulvar vestibule which extends between clitoris anteriorly to the posterior fourchette and laterally bounded by labia minora is the major site for inflammatory disorders.

Sex hormones play a role in regional differentiation and maturation of skin in this area and may undergo atrophy after menopause. Vulval dermotoses may confer persistent discomfort in the form of chronic itch (eg. LSA, eczema) and may be painful (eg. Erosive LP, Pemphigus), which may interfere with normal activities of daily living. Sometimes it causes relationship problem due to sexual dysfunction (eg. LSA) and some patients with chronic symptom may have symptoms and signs of depression.

Since, genital disease caused by dermatoses, frequently resemble those used by sexually transmitted diseases, it is important to be aware of this. It causes extreme anxiety in patients, because venereal disease is often patient's primary concern.

In premalignant conditions it is important to recognize them at an earliest stage. Most of the dermatoses are of non-infectious origin and once this

is established patient must be reassured. If it occurs in children, the question of sexual abuse may arise.

This study highlights the conditions and features of non-venereal genital dermatoses, of both the sexes. This study is to find the pattern of non-venereal dermatoses in male and female external genitalia and their relative frequencies at a tertiary care centre.

REVIEW OF LITERATURE

Though there is no uniform classification for the non venereal genital lesions, various authors have described them as follows:

Tomaz F has categorized skin diseases producing genital lesions into four Groups[1]

1. Those caused by infective agents such as bacteria, fungus and viruses.
2. Benign tumors
3. Premalignant and malignant conditions.
4 Miscellaneous category that includes allergic conditions, atrophic lesions and skin diseases of unknown etiology.

Cutaneous diseases of female genitalia have been described by Pinkus HS as follows[2]

1. Vulvar manifestations of common diseases.
2. Unique vulvar diseases
3. Infections
4. Vulval neoplasia
5. Vulvar manifestations of systemic diseases

Johnson R.A. has classified cutaneous diseases of male genitalia as follows:

1. Generalised cutaneous diseases

a. Papulosquamous eruptions
b. Dermatitis
c. Bullous diseases

d. Infestations

e. Drug eruptions

f. Mucosal disorders

2. Diseases related to specialized anatomy or function

3. Infections

a. Bacterial

b. Fungal

c. Viral

4. Neoplasia

a. Benign

b. Premalignant

c. Malignant

The available literature on the different diseases affecting the genitalia is reviewed here. In both males and females it can be discussed under the following conditions.

I. Congenital

II. Variation from normal conditions.

III. Infections and Infestations.

IV. Inflammatory disorders

V. Genital manifestations of cutaneous diseases

VI. Genital manifestations of systemic diseases.

VII. Adverse cutaneous drug reactions.

VIII. Bites and stings

IX. Mechanical injuries

X. Benign tumors

XI. Premalignant & malignant tumors.

I. CONGENITAL

Males

- Haemangioma of glans penis
- Median raphe cyst
- Melanocytic naevi

II. VARIATION FROM NORMAL CONDITIONS

Common to both sexes

- Fox-Fordyce disease
- Cutis anserina
- Acrochordans

Males

- Pearly penile papules
- Phimosis
- Paraphimosis
- Hypospadias

Females

- Vulvar vestibular papillomatosis

III.INFECTIONS AND INFESTATIONS

BACTERIAL

Common to both sexes

- Staphylococcal aureus
- Streptococcal infections
- Trichomycosis pubis

- Ecthyma gangrenosum
- Erythrasma
- Mycobacterium tuberculosis
- Leprosy and rarely others

Males

- Fournier's gangrene

Females

- Streptococcal vulvovaginitis

VIRAL

Common to both sexes

- Herpes Simplex
- Varicella Zoster
- Molluscum contagiosum
- Human papilloma viral infections and others

FUNGAL

Common to both sexes

- Dermatophytosis
- Candidiasis
- Pityriasis versicolor
- Cutaneous cryptococcosis
- Rarely other deep mycoses

INFESTATIONS

Common to both sexes

- Scabies
- Pediculosis
- Lymphatic filariasis
- Cutaneous larva migrans
- Schistosomiasis
- Amoebiasis and others

IV.GENITAL MANIFESTATIONS OF CUTANEOUS DISEASES

Common to both sexes

- Psoriasis
- Lichen planus
- Lichen nitidus
- Pityriasis rosea
- Seborrheic dermatitis
- Vitiligo
- Pemphigus vulgaris and its variants
- Bullous and Cicatricial pemphigoid
- Erythema multiforme and Steven Johnson syndrome
- Lichen sclerosus et atrophicus
- Primary amyloidosis of skin
- Avitaminoses

Males

- Balanitis xerotica obliterans
- Plasma cell balanitis

V. INFLAMMATORY DISORDERS

Common to both sexes

- Eczema
- Allergic contact dermatitis
- Irritant contact dermatitis
- Contact urticaria
- Atopic dermatitis
- Hidradenitis suppurativa
- Crohn's disease
- Toxic epidermal necrolysis

MALES:	FEMALES:
Balanitis	Vulval vestibulitis
Balanoposthitis	Plasma cell vulvitis
Acute Scrotum	Vulvar burning Syndrome
Aphthosis	
Priapism	
Peyronie's disease	

VI. GENITAL MANIFESTATIONs OF SYSTEMIC DISEASES

Common to both sexes

- Reiter's disease
- Behcet's syndrome
- Phlebothrombosis and thrombosis
- Collagen vascular disorders

Males

- Sclerosing lymphangitis of penis
- Scrotal/ Penile oedema

VII. ADVERSE CUTANEOUS DRUG REACTIONS

FIXED DRUG ERUPTION

1. Antibiotics-Cotrimoxazole, Tetracycline, Ampicillin
2. Foscarnet
3. Topical 5 Flurouracil Cream
4. Imiquimod Cream
5. Glucocorticoid induced atrophy
6. Papaverine induced ulcer
7. Isotretinoin
8. Warfarin necrosis
9. PUVA therapy
10. Intravenous drug users

VIII. BITES & STINGS

IX. MECHANICAL INJURIES

- Trauma
- Foreign body
- Zip fastner injuries in males
- Cosmetic ring occlusion injuries

X. BENIGN TUMORS

Common to both sexes

- Verruciform xanthoma
- Angiokeratoma of Fordyce
- Syringoma
- Other tumors

Males

- Idiopathic calcinosis of scrotum
- Benign penile melanosis/ lentiginosis
- Scrotal cyst
- Dartoic leiomyoma
- Leiomyosarcoma and Rhabdomyosarcoma of Penis and Scrotum

Females

- Hidradenoma papilliferum

XI.PREMALIGNANT AND MALIGNANT TUMORS

PREMALIGNANT

- Erythroplasia of Queyrat
- Bowenoid papulosis
- Extramammary paget's disease [EMPD]
- Buschke- Lowenstein tumor.

Males

- Balanitis xerotica obliterans
- Cutaneous horn
- Pseudoepitheliomatous,Micaceous and Keratotic Balanitis of Civatte.

Females

- Lichen sclerosus et atrophicus.

Malignant

- Squamous cell carcinoma
- Basal cell carcinoma
- Malignant melanoma
- Bowen's disease of the vulva
- Connective tissue tumors [sarcomas]

CONGENITAL GENITAL LESIONS IN MALES

Haemangioma of glans penis

Haemangiomas of the glans penis are a rare but distinctive disorder. The origin of these vascular lesions is controversial[3]. It has been hypothesized that they may represent either a maldevelopment of cavernous tissue or a congenital herniation of cavernous tissue. Kopf and Bart have suggested that they represent venous ectasias similar in pathogenesis to the venous lakes of the oral lips[4].

Clinically, penile haemangiomas are asymptomatic vascular lesions usually first noted during childhood or adolescence. The primary lesions are solitary or multiple and reddish-purple to blue haemangiomas that empty on compression. Occasionally, an underlying defect in the tunica albuginea can be

detected on palpation. Microscopic examination demonstrates multiple, dilated, blood-filled vascular spaces lined by endothelium. A distinct pseudocapsule of fibrous tissue is absent. The vessels are thin-walled and do not demonstrate significant smooth muscle. Occasional vascular thrombi may be observed. Penile haemangiomas are benign and rarely of clinical importance except that they might be confused with Kaposi's sarcoma.

Median raphe cyst

It is an uncommon developmental defect noticed within the first three years of life. It denotes defects in the embryologic development of the male genitalia[(5)]. It has been proposed that they develop secondary to incomplete closure of the urethral or genital folds or they arise from out growths of embryologic epithelium after primary closure of folds. The presence of serotonin storing cells in the lining of three of four cysts suggests their origin from the endodermal portion of the urethra which contains similar endocrine cells[(7)].

Clinically, they present as translucent cysts that most commonly occur along the ventral aspect of the penis but may also occur anywhere along the midline from the urethral meatus to the anus. Puncture of the cyst wall characteristically yields clear watery fluid. Occasionally infections like gonorrhoea may develop[(8)]. The cyst may be histologically confused with apocrine cystadenoma of the penis. It does not communicate with either the overlying epithelium or the urethra.

Fox fordyce disease

It involves the mons pubis and labia and is extremely pruritic. The pink follicular papules may be obscured by secondary infections or lichenification. The itching distinguishes this condition from syringomas, but apocrine or miliarial retention cysts may cause difficulty in diagnosis.

Melanocytic naevi

Congenital and acquired melanocytic naevi are common. Divided or kissing naevus has been reported, with one component located on the glans and the other on the distal penile shaft or prepuce, separated by uninvolved skin across the coronal sulcus[9].

Pearly penile papules

They are common normal anatomic structures located on the proximal glans penis. Clinically, they appear as asymptomatic skin coloured 1 to 2 mm, discrete domed papules, evenly distributed circumferentially around the corona & extending proximally on each side of the frenulum. Microscopic studies suggested that these represent angiofibromas[10].

Phimosis

A narrowing of the prepuce due to lack of expansion of the preputial ring or of Ehrmann's dorsal fibre bundle , results from a congenital stenosis (or from a later secondary balanitis.) with lack of retraction of the prepuce, whose opening has been severely narrowed. The concomitant impaired urinary secretion may lead to formation of a smegmolith.

Paraphimosis

In this the prepuce is retracted behind the glans and cannot be brought back without manual help, thus causing severe oedema in the area of the glans and surrounding tissue. Such condition has been observed with congenital or acquired phimosis & in various forms of balanoposthitis & infections.

Hypospadias

In the male it signifies that the urethra is located on the underside of the penis. This can lead to difficulties in sexual act and insemination.

BACTERIAL INFECTIONS

Cellulitis of the scrotum and penis

This is an uncommon condition probably because of the rich vasculature of the tissue. In the immunocompetent host, aggressive pathogens such as Group A Streptococci, Group B Streptococci, or Staphylococcus aureus can enter through a break in the epithelium. Group B Streptococci is the most common bacterial pathogen in the neonatal period and can cause cellulitis following circumcision. In the immunocompromised host pathogen such as Pseudomonas aeroginosa can cause soft tissue infections such as ecthyma gangrenosum. Symptomatically, early infection is associated with local pain and fever. Clinically, the genital skin is red, warm and tender and may be associated with an obvious portal of entry.

Staphylococcus infections

These organism causes primary infections in the anogenital region (folliculitis, impetigo, bullous impetigo, furuncles, carbuncles), secondary

infections of dermatoses (atopic dermatitis, lichen simplex chronicus and at times, psoriasis) or superinfections (gential herpes, chancre, candidal intertrigo).

Trichomycosis pubis

Cornybacterium species causes asymptomatic yellow, red (or) black micronodules around hair shaft[12] .

Erythrasma

It is caused by diphtheroid gram positive cornybacterium minutissimum. They are present mostly in the groin and sometimes also in the axillae and the interdigital spaces of the toes. They appear as uniformly coloured pink to tan, well demarcated, mildly scaly plaques over the upper thighs with bilateral symmetrical distribution. It is more common in diabetics and under wood's light they show a coral red fluorescence.

Fournier's gangrene (idiopathic scrotal gangrene)

It is a necrotising soft tissue infections of the genital and anorectal region characterised by tissue necrosis and rapid progression and lack of suppuration with severe systemic toxicity[13]. The infection is usually polymicrobial with urinary extravasation, indwelling catheter after trauma[14] intra venous drug abuse into the dorsal vein of the penis and infiltration of the urethra from a bladder cancer. The infection is limited to skin and subcutaneous tissue and extends to the base of the scrotum[15]. The testis, glans penis and spermatic cord are usually spared.

Mycobacterium tuberculosis infections

Acute tuberculous ulcers on the penis are small erythematous nodules, rapidly breaking down to form painful shallow ulcers with undermined bluish border of size less than 2 cm[16]. If successive crops of lesions occur, the eventual scarring leads to remarkable worm eaten appearance.

Papulonecrotic tuberculide of the glans penis and lupus vulgaris of the vulva has also been reported[17].

Leprosy

Involvement of the genitals in leprosy can be seen in all varieties and is manifested as nodules, infiltration, ulceration, shrinkage of testicles, thinning of pubic hair and vitiligo like depigmentation. In the early classic observation of this disease by Danielson and Boeck, involvement of the penis, prepuce and coronary sulcus was reported in about 20 % of cases.

Pathologically, according to G. Klingmuller [18] we can distinguish chiefly four different conditions 1) Atrophy of the testicles 2) Distinct thickening of the tunica vaginalis 3) Thickening with hyalinization of the basal membrane, ending in complete replacement of the renal tubules by hyalinised fibrous tissue 4) Hypertrophy of the Leydig cells with clumping is seen. Four hundred and sixty seven male patients with leprosy were screened for genital involvement. Genital lesions were observed in 6.6% of all male cases of leprosy[19]. They were seen most frequently in lepromatous leprosy (25.8%) followed by borderline lepromatous (13.3%) and borderline tuberculoid (1.4%) leprosy. Genitals are involved in Histoid leprosy, which is a multibacillary variant of lepromatous leprosy characterised by succulent shiny nodules[20].

VIRAL INFECTIONS

Herpes simplex

Occasionally, genital herpes simplex may be acquired non-sexually[21] (eg. during contact sports such as rugby foot ball).

Herpes zoster

Herpes Zoster infections of the second,third or fourth sacral nerves involves penis, scrotum and perineal skin. Clinically, zoster is characterized by grouped vesicles in a dermatomal distribution often associated with varying degrees of neuritic pain and may be associated with disturbances of defaecation and urination[22].

Molluscum contagiosum

Molluscum contagiosum is seen commonly on the scrotal, perineal skin of children and young adults[23]. This is a pox virus infection characterised by clustered 1-5 mm dome shaped papules with central umblication, commonly it varies from this classic description following trauma or spontaneous involution, becoming hyperkeratotic and/ or inflamed, such that the skin coloured, centrally umblicated domed becomes a red scaly papule.

Human papilloma virus [HPV]

Non sexual acquisition of anogenital warts in adults is assumed to be possible. HPV 1 and 2 may occur in genital warts[24]. The sensitivity of PCR analysis has shown that HPV – DNA may be present on innerwear and fingers of patients with genital warts suggesting that transmission could occur by number of routes[25,26].

FUNGAL INFECTION

Genital candidiasis

Skin of glans penis in uncircumcised men, may sometimes be colonized by candida asymptomatically[27]. This is common in uncontrolled diabetes, immunosuppressed and severe debilitating illness. Candidal intertrigo in males usually represents over growth of endogenous candida albicans with recurrent balanoposthitis, the source is exogenous from the sexual partner. It may present with soreness, fissuring, irritation, transient tiny papules or pustules on the glans which ruptures leaving a peeling edge. In females, pregnancy, contraceptive use, IUD have been associated with elevated carrier states, presenting with itching, soreness, dusky erythema of vaginal mucosa and vulvar skin with thick creamy white discharge.

Dermatophytosis

This commonly involves the inguinal area i.e. Tinea cruris, but rarely caused superficial infection of the scrotum or penis,scaling is minimal and inflammation is inconspicuous against a background that is normally rugose and erythematous[29]. Chronic scratching may induce an eczematous or lichen simplex chronicus on the scrotum or less commonly on the penis. The causative agents are Trichophyton rubrum or Epidermophyton floccosum.

Pityriasis versicolor

This occurs uncommonly as an asymptomatic scaling hypo or hyperpigmented macular eruption on the shaft of the penis. This superficial fungal infection may occur only on the penis, but is usually present on the upper trunk as well. Rarely affects the penis but almost never in isolation[30].

Deep fungal infections

Rarely genital involvement of histoplasmosis, blastomycosis, paracoccidioidomycosis have been reported

PARASITIC INFECTIONS

Scabies

Scabies presents with pruritus associated with small serpiginous tunnels on the penis and/or scabetic nodules on the scrotum and penis[31].

They are intensely itchy and may persist for weeks or months after the effective treatment of scabies[32]. Histology of the lesion may simulate pseudolymphoma[33]. Eczematous dermatitis occurs secondary to scratching.

Hyperkeratotic scabies occurs in the immunocompromised individuals, presenting with hyperkeratotic and crusted lesions of the penis.

Phthiriasis pubis

It is most commonly manifested in the pubic hair. Clinical findings include adult lice, appearing as 1 to 2 mm brownish grey specks in the pubic, scrotal and inguinal hairy sites[34]. Nits are attached to the hair. Papular urticaria, secondary changes such as lichenification, excoriation, impetiginized excoriation and maculae caeruleae – slate grey or bluish grey macules 0.5 to 1cm in diameter on the lower abdomen, buttocks, and upper thighs may be present.

Lymphatic filariasis

This is caused by filarial worm Wuchereria bancrofti, Brugia malayi and Brugia timori are estimated to infect approximately one quarter of a billion

individuals in tropical clinics[35]. In many endemic regions upto 25% of adult male population have lymphatic filariasis with thickened scrotal skin and hydrocoele. Adult worms lodge in lymphatic vessels, resulting in a chronic inflammatory lymphatic obstruction and chronic lympheodema. Clinically early signs of infection include swelling, erythema and tenderness of scrotum[36]. Long standing disease may result in orchitis, hydrocoele, thickening of scrotal skin, scrotal elephantiasis, secondary bacterial cellulitis or lymphangitis and a verrucous epidermal hypertrophy.

Cutaneous larva migrans

This is caused by nematodes and as they wander, a serpiginous track is created from the sites of penetration, i.e. the groin or buttocks.

Schistosomiasis

Rarely genital lesions occur as ova shed by schistosoma haematobium enter the perineal vessels[37]. The papules and nodules may be skin coloured, pink or brown, scattered or grouped affecting the penis and scrotum and may rarely ulcerate. In females vulval lesions are chronic, scarring, granulomatous and may ulcerate and calcify[38].

Amoebiasis

Genital and perianal ulceration occur either at the site of penetration of amoeba, Entaemoba histolytica, most commonly on the penis of homosexual males or as a consequence of enteric amoebiasis[39]. Serpiginous ulcer with distinct raised,thickened often undermined edges with an erythematous rim of about 2 cm wide are seen, which are intensely painful. It is covered with

mucopurulent exudates and necrotic slough. Vulval amoebiasis is usually secondary to intestinal amoebiasis[40].

GENITAL MANIFESTATIONS OF COMMON DERMATOSES

Psoriasis

This is the most common non infectious dermatosis occurring on the penis. In circumcised males, appears as a well demarcated erythematous plaque with varying degrees of scaling. In uncircumcised males, plaques occur on both the glans and the inner aspect of the foreskin and lack scaling (inverse psoriasis).

In females, plaques are often found on the labia majora (or) mons pubis[41]. Genital psoriasis is frequently accompanied by asymptomatic, unrecognized intertriginous psoriasis, perianally and in the intergluteal cleft, which appears as an elongated, well-demarcated erythematous plaques. The frequency with which the genital area alone is involved appears to be low, but this area is not uncommonly involved together with other areas[42].

Lichen planus (LP)

Lichen planus of penis may be the sole manifestation of the condition, but it is most often part of a more wide spread eruption. Clinically, violaceous flat topped papules with a lacy white surface pattern is seen. It occurs most commonly on the glans penis and also on the penile shaft, prepuce. Older scrotal lesions may have a greyish hue associated with melanin incontinence into the dermis. Annular lesions occur on the glans and penile shaft. Erosive lichen plans with oral involvement may persist for decades. In majority of

cases, penile lichen planus undergoes spontaneous remission in due course with residual post inflammatory hyperpigmentation.

Squamous cell carcinoma is a rare complication of chronic lichen planus[43]. Lichen planus female genitalia are fairly common. The clinical presentation may be subtle, fine reticulate papules to severe erosive disease which is painful and is accompanied by scarring and loss of normal vulvar architecture[44]. Association of erosive lichen planus of the vulva and vagina with desquamative gingivitis has been termed the Vulvo vaginal – gingival syndrome[45]. In older females the association of coexisting vulvar and lichenoid oral lesions has been described[46].

Lichen nitidus [LN]

An uncommon asymptomatic cutaneous disorder characterized by the appearance of small, discrete, skin coloured papules occurring most commonly on the penis, abdomen and arms[47]. Clinically shiny 1-2 mm, well demarcated domed, skin coloured papules are seen on the shaft of the penis.The course of penile lichen nitidusis chronic and extending over years.

Pityriasis rosea

The first manifestation called Herald patch which is large and more conspicuous than the later eruption, rarely may be seen on the penis[48]. Clinically, sharply defined bright red, round or oval plaque covered by a fine scale.

Seborrheic dermatitis

Seborrheic dermatitis may occasionally involve the groin, scrotum, vulva, where it appears as an erythematous scaly thin plaque. The nature of the

scales, as well as the more diffuse nature of the process and the presence of seborrheic dermatitis in other areas, may help distinguish this condition from psoriasis.

Vitiligo

Vitiligo is an acquired pigmentary disorder characterized by loss of melanocytes resulting in depigmentation . Approximately 0.1 percent to 4 percent of people worldwide are affected by vitiligo. Indian studies report 0.46 percent to 8.8 percent prevalence of vitiligo. Amelanotic macules in vitiligo are found in areas that are normally hyperpigmented as in genitalia[49].

Both vitiligo and occupational leukoderma may involve the scrotum[50].

BULLOUS DERMATOSES

Pemphigus Vulgaris

It may first develop on the penis with flaccid bullae rupturing readily to form erosions and crusts. In females,presents as erosions. Cervix, urethra and vulva may be involved,erosion extending peripherally with shedding of epithelium[51] and chronic lesions in folds, including vulva and groin often become vegetating.

Pemphigus Vegetans

It is exceedingly rare.

Bullous Pemphigoid

It is more common in males. In females, it is a rare entity characterized by recurrent blistering confined to the vulva of young girls, which does not result in scarring[52]. The bullae are tense and older lesions may be haemorrhagic.

Pemphigoid gestationis and Dermatitis herpetiformis

They have predilection for the genital area[53]. Vesicles, bullae and erosions with intense itching . scabies should be excluded before confirming diagnosis with biopsy and immunofluorescence.

Benign mucosal Pemphigoid

It is rare in males, but may involve the corona (or) glans and scarring may produce meatal strictures. Genitals are involved in half of female patients with vaginal soreness, blisters and erosions of vulva[54]. Scarring leading to obliteration of vulvar architecture with labial fusion, introital shrinkage and end stage scarring resemble lichen sclerosus[55].

Chronic Familial Benign Pemphigus

Flaccid vesiculopustules, crusted erosions or expanding circinate plaques appear in perineum and groin. Hypertrophic vulvar lesions are seen[57].Localized perineal papules and plaques with an acantholytic histology and without other features has been reported.

Linear IgA Dermatoses

Involvement of perineum and vagina leads to scarring[57]. Tense bullae are present in the vulval and pubic areas.

Erythema Multiforme

Bullae are commonly seen over the penis.

Epidermolysis Bullosa

It may affect vulva but seldom affects the vagina.

Lichen sclerosus et atrophicus [LSA]

This is a chronic idiopathic asymptomatic dermatosis characterized by white papules or plaques often occurring on the anogenital skin. Penile LSA is diagnosed most commonly in middle age. Symptomatic individuals reportitching, burning with urination, painful erections, diminished sensation of the glans, or diminution in the caliber and force of the urinary stream in uncircumcised males, a sclerotic, constricting band forms 1 to 2 cm from the distal end of the prepuce sometimes causing phimosis and urinary obstruction.

Clinically ivory white macules and plaques are noted in all patients(57).

It occurs most commonly on the glans and inner aspect of the prepuce, in some individuals, it may occur circumferentially around the urethral meatus. Untreated sclerotic lesions progress to BXO.

In females mean age of onset is 5th or 6th decade and is more common than men at the ratio of 6 : 1 to even 10: 1.Anogenital LS is characterized by porcelain white atrophic plaques that may become confluent extending around vulval and perianal skin in a figure-of-eight configuration. The resulting atrophic plaque may have a cellophane-paper-like texture, wrinkled and fragile surface associated with telangiectasia, purpura, erosions, fissuring or ulceration

Atrophy can lead to loss of labia minora, burying of the clitoris, obstruction of urinary outflow, or other architectural changes. Vagina is never involved in LSA.

Avitaminosis

Deficiency of Vitamin A, C, Riboflavin and Nictotinamide produces mucocutaneous lesions. Pellagrous vulvitis presents markedly dirty brown,

blackish coarsely lamellar scaling or hyperkeratotic erythemas that form a rhagadiform pleated sheet. Erythema with seborrheic scaling may be seen.

In males scrotal dry dermatitis occurs.

Balanitis xerotica obliterans (BXO)

This is the end stage of some cases of chronic balanoposthitis. The most common disorder associated with BXO is lichen sclerosus[58]. Clinically prepuce is thickened, contracted, fissured and fixed over glans penis andphimosis may result. Ivory white macules, papules or plaques are seen on the glans penis and prepuce. Risk of carcinoma is about 4-6%.

Plasma cell balanitis [PCB]

PCB or balanitis cicumscripta plasma cellularis is a benign, idiopathic condition.This presents as a solitary, smooth, shiny red orange persistent plaque on the glans of uncircumcised, middle aged to older men.

The etiology and pathogenesis are unknown. Clinically an erythematous, shiny, moist and glistening macular to slightly raised plaque on the glans penis[59]. Coronal sulcus and inner prepuce may be involved. The color of the lesion is usually bright red due to microhaemorrhage resembling cayenne pepper appearance usually solitary but multiple and erosive, vegetative types have been reported[60].

Histologically, thinned epidermis with diamond shaped lozenge keratinocytes with uniform intercellular spaces termed watery spongiosis seen. Dense band like plasma cell infiltrate in dermis with vascular proliferation is seen.

Plasma cell vulvitis

It is the female counterpart of plasma cell balanitis. It is also known as Zoon's vulvitis or vulvitis circumscripta plasma cellularis. It may be pruritic with burning and dyspareunia. Clinically present as shiny, glazed, erythematous patches on the vulva, orange discolouration with multiple purpuric spots. Painful erosions may occur. Histologically similar to plasma cell balanitis.

INFLAMMATORY DISORDERS

Allergic Contact Dermatitis [ACD]

It is by contact induced type IV cell mediated hypersensitivity after prior sensitisation to the agent concerned[61]. The challenges are to consider the diagnosis and identify the allergen and its likely source[62]. Patch testing is required. Clinically, genital ACD presents with erythema and marked oedema and, in time, with microvesiculation and exudation seen on the penis. On the vulva, exudative, painful plaques occur.

Allergens of relevance to anogenital contact dermatitis[63]

1. Methyldibromoglutaronitrile
2. Kathon CG
3. Lignocaine and other topical anaesthetics
4. Neomycin
5. Nystatin
6. Steroid moieties
7. Rubber
8. Latex condoms
9. Spermicides

Irritant contact dermatitis

Genital skin is more susceptible to topical irritants with high transepidermal water loss, predisposing the area to irritant and allergic contact dermatitis. This is commonly caused by condoms, douching agents, applied medicaments soaps, home remedies and underwear. Clinically characterized by erythema and oedema on the scrotum and penis rather than vesiculation. In chronic cases lichenification, fissured dermatitis with or without papulovesiculation occurs. In females poorly demarcated erythema and hyperpigmentation which later on becomes lichenified.

Atopic dermatitis

Individuals with atopic dermatitis frequently have involvement of the penis or scrotum as part of either flexural or generalized dermatitis. Atopic patients can have the dermatitis confined to single area of lichen simplex chronicus on the scrotum for year or decades.

Hidradenitis suppurativa

Hidradenitis suppurativa, sometimes called apocrinitis, acne inversa generally is manifested by painful genital skin involvement with fibrous bridges, comedones, folliculitis, furunculosis, deep discharging sinuses, nodules, cysts, and scars in the groins. Perineum is most commonly affected in men. One of the manifestation of hidradenitis suppurativa is that of chronic ulceration as inflamed cysts break down. This can occur on keratinized, hair bearing areas of the vulva but also can occur on the modified mucous membranes[(64)].Ulcerations are especially likely to occur in the setting of chronic oedema[(65)].

Crohn's disease

Crohn's disease of the penis is rare. Metastatic cutaneous ulceration of the penile shaft, multiple scrotal urinary fistulae and destruction of the proximal urethra have been reported[66]. In females vulval oedema[67] which is firm and often associated with fissures and sinus formation.

Balanitis & Balanoposthitis

Balanitis is an inflammatory condition of the glans penis, posthitis is an inflammation of the mucosal surface of the prepuce. Balanoposthitis is an inflammation of the contiguous & opposing mucosa of the glans penis and prepuce. It occurs in uncircumcised males. It may occur due to infection, trauma & irritants such as retained smegma & soaps[68]. Incidence is higher in 2to 5 years of age, where it is characterized by erythema, swelling, discharge, dysuria, bleeding & ulceration of the glans. In adult uncircumcised males, it commonly occurs as an intertrigo with no specific etiologic agent identifiable.

Diabetes & glycosuria is a common predisposing condition[69].

Peyronie's disease

This is an idiopathic disorder of the penis that leads to distortion or angulation of the erect penis. Onset is usually in the middle age. Symptomatically, erection may be associated with pain, caused by fibrosis of the tunica albuginea, the covering sheaths of the corpora cavernosa[70]. The inflammatory plaque begins in the dorsal midline connective tissue near the base and extends to the adjacent tissue.

Vulvodynia and vestibulitis

This includes vulvodynia and vestibulitis, where patients complaints of chronic sensation of burning or redness of the vulval skin[71], in the former condition, and triad of dyspareunia, vestibular tenderness to light touch and erythema of the vestibular epithelium in the later condition[72].

GENITAL MANIFESTATIONS OF SYSTEMIC DISEASES

Reiter's Disease

This is characterized by an episode of peripheral arthritis and urethritis and frequently is accompanied by circinate balanitis (CB), conjunctivitis, stomatitis, and keratoderma blenorrhagica. In uncircumcised males with CB, superficially erosive plaques with ragged margins occur around the corona, with smaller satellite lesions on the glans and prepuce[73]. In circumcised males, balanitis circinata sicca is seen associated with urethral discharge and periurethral erythema.

Behcet's syndrome

It is the association of recurrent aphthous stomatitis with genital ulceration, uveitis and skin lesions[74]. Large, painful, deep aphthous- type ulceration occur commonly on the scrotum and penis. In females the genital ulcers are very painful.

Phlebothrombosis and thrombophlebitis

Severe Raynaud's phenomenon associated with progressive systemic sclerosis can reduce penile arterial blood flow and cause impotence. In diabetics, occlusion of arterioles commonly results in neuropathy and erectile

dysfunctions and rarely, infarction/gangrene of the penis. Penile gangrene can be associated with urolithiasis, urinary tract infections, infected piles, anaemia and penile calciphylaxis, occurring in diabetes mellitus with renal failure[75].

Clinically, they present as a subcutaneous cord that is usually nontender and lacks any signs of inflammation.

Collagen vascular disorders

Genital involvement in lupus erythematoses and dermatomyositis do occur, but they seem to be non specific[76].

Non venereal sclerosing lymphangitis of the penis

It is a rare condition due to thrombosed or sclerosed distal lymphatic vessel of penis[77]. It's etiology is unknown, but often follows vigorous sexual activity. It has been reported to be frequently associated with trauma to this area and has a minimum inflammatory component. Clinically, a painless, firm, at times nodular translucent cord appears suddenly, usually parallel to the corona or the glans. It is a self limiting condition.

Scrotal/Penile Oedema

This is characteristically painless, non tender and non erythematous and may be acute or chronic and occurs as a result of local or distant disorders of lymphatic vessel inflammation, fibrosis, or obstruction. Because of the loose connective tissue support and the abundant vasculature of the genitalia, lympheodema is often confined to the penis and scrotum and does not involve the abdominal wall. The causes are contact dermatitis, angioedema, parenteral fluid overload, and peritonitis.

ADVERSE CUTANEOUS DRUG REACTIONS

Fixed Drug Eruption [FDE]

They follow ingestion of a sensitizing drug, occurring most commonly on the glans and distal shaft [(78)]. The common drugs implicated are[(79)] ,

1. Antibiotics – Cotrimoxazole, Tetracycline, Ampicillin.
2. Foscarnet
3. Topical 5 Flurouracil cream
4. Imiquimod cream
5. Glucocorticoid induced atrophy
6. Papaverine induced ulcer
7. Isotretinoin
8. Warfarin necrosis
9. PUVA therapy
10. Intravenous drug users

Patients often give a history of having identical lesions occurring at the same site. Clinically they occur as inflammatory plaque of 2 to 3 cm in diameter that become bullous in some cases. Patients with previous fixed drug eruption often have macular, violaceous to brown hyperpigmentation.

In females sometimes erosions occur on the vulva, mostly located in the vestibule (or) on the modified mucous membrane of labia minora (or) medial aspects of labia majora. Erosions are irregular with shaggy border. The deepening hyperpigmentation as in keratinized skin is usually absent. The common drugs implicated are acetaminophen, allopurinol, barbiturates,

NSAIDS, tetracycline, penicillin, sulfonamides,oral contraceptive pills and frusemide.

BITES AND STINGS

The clinical picture following Latrodectus bites is called latrodectism, being located most often on the genitals or buttocks as a result of being bitten while seated in a lavatory.

MECHANICAL INJURIES

Traumatic urethral diverticula may be present as soft, compressible, nodulocystic lesions at the site of penile shaft[(80)]. Penile nodule due to self insertion of glass beads may be mobile & inert[(81)] .Sexual aids can result in abrasions, eczema and ulceration. Fracture of the penis can occur, during sexual act[(82)] . Zip fastner injuries to the penis and strangulation by condom rings[(83)], rubber bands, string, nuts, bushes may occur.

BENIGN EPITHELIAL AND APPENDAGEAL TUMORS

Verruciform Xanthoma

This condition was first described in scrotal skin in 1981[(84)]. It seems to be more pedunculated and common in the Japanese. The etiology and pathogenesis are unknown.. No evidence of an infective cause has yet been demonstrated and are rare over vulva[(85)]. Clinically, presents as a painless yellow, brown or red verrucous , sessile or papillary plaque in the anogenital region[(86)].

Angiokeratoma of Fordyce

Angiokeratoma of scrotum & penis are characterized by ectasia of superficial dermal blood vessels and hyperkeratosis, pathogenesis is unknown[87] , but proposed etiologies include vascular ectasia, neoplasia and venous obstruction[88]. A defect of elastic fibres of scrotum has also been incriminated as the cause of ectasia.

It most commonly occurs in the scrotum as soft and compressible purple, 1- 5 , usually multiple with upto 50 – 100 caviar like scrotal papules and often line up along small veins. A corresponding lesion of the female genitalia has also been occasionally reported[89]. The lesions may be solitary or multiple may cause bleeding in pregnancy.

Syringomas

Benign tumors of the intraepidermal eccrine sweat duct, occur on the penis, presenting as discrete, skin-colored, dome-shaped papules, 1 to 3 mm in size located on the dorsal and lateral aspects of the shaft. In females it is seen around the time of puberty. Vulvar syringomas are relatively a rare occurrence.

Scrotal Cysts

A common occurrence, whereas those arising on the penis are infrequent. Epidermal inclusion cysts may arise in scars.

Idiopathic Calcinosis of the Scrotum

It is a benign idiopathic, common condition presenting as rock hard, smooth white papules or nodules on the scrotum. It is much rarer on vulva[90]. It may become secondarily inflamed or infected following trauma.

Hidradenoma Papilliferum

These appear as skin coloured papules or nodules on the vulva, showing apocrine type differentiation histologically.

Other Tumors

Seborrheic keratosis of the male genitalia may be mistaken for viral warts[91]. Rarely, Juvenile xanthogranuloma, Fabry's disease, Hansen's disease, glomangioma, pyogenic granuloma, epitheloid haemangioma[92], lymphangioma circumsciptum[93], neurofibroma, granular cell myoblastoma[94] have been described.

PREMALIGNANT AND MALIGNANT TUMORS

Buschke – Lowenstein Tumor

This is a slowly growing squamous cell carcinoma accounting for upto 25% of penile cancers, caused by human papilloma virus infection[95]. It is also known as giant condyloma. It occurs most frequently on the glans, prepuce and less often on the scrotum & perineal region, appearing as a cluster of genital warts. They are locally extremely aggressive and tend to recur repeatedly even after apparently adequate surgery[96]. Because of low grade aggressive nature, the prognosis is usually excellent.

Squamous Cell Carcinoma in Situ (Erythroplasia of Queyrat)

It is a premalignant condition most commonly occurring in uncircumcised males, also in chronic inflammatory dermatoses such as lichen sclerosus, lichen planus, BXO, and HPV infections[97]. The penile lesion is situated on the glans, beginning under the foreskin as a red glazed, barely raised, well circumscribed and rather irregularly shaped plaque which typically

has a Lacquered appearance[98]. It is soft and supple and erosions may occur later. Invasive squamous cell carcinoma, usually presents as warty, exophytic papule (or) nodule, erythematous and indurated. SCC of the scrotum is less common than on the penis.

SCC of the vulva presents with firm, indurated papules and nodules which may ulcerate. Metastasis to regional lymphnodes is common in both penile and vulval carcinoma and has been reported in about 60%[99] and 30% of cases respectively[100].

Extra mammary Paget's disease [EMPD]

In males, it can occur anywhere in the anogenital area, including the glans penis, may be multicentric[101] and presents as irritating, itchy, burning, red scaly patches or plaques. In females vulva is the most common involved site, which is subdivided in to primary and secondary disease. The two most common tumors associated with secondary vulval EMPD are anorectal adeno carcinoma, and urothelial carcinoma of the bladder or urethra, and other associated tumors reported include cervix, endometrium, and ovary[102].

Bowenoid Papulosis

It is charaterised by multiple, brown, small 2-10 mm, slightly elevated papules. The lesions are asymptomatic, usually seen over penile shaft and glans in men and over perineal area and vulva in women. The histopathological features are identical to erythroplasia of Queyrat and Bowen's disease, but the cytological atypia is less severe[103].

Invasive carcinoma is extremely rare[104] and spontaneous regression has been reported[105].

Pseudo epitheliomatous, micaceous, keratotic balanitis of Civatte [PEMKB]

PEMKB is a rare penile condition, which presents as thick scaly micaceous patches on glans penis in older uncircumcised men[106]. Some consider this as a variant of lichen sclerosus or a form of locally invasive verrucous carcinoma. Metastatic spread has not occurred except where there was a penile horn[107].

Basal cell carcinoma (BCC) of the penis and scrotum

BCC, the most common malignancy in geographic regions populated by fair-skinned individuals, rarely arises in the penis or scrotum. It is a locally invasive neoplasm of the pilosebaceous apparatus.Ultraviolet radiation exposure, which is a major etiologic factor in BCC at other sites, is an uncommon factor in the pathogenesis of anogenital lesions. As with other skin cancers, BCC of the genital skin is much more common in fair-skinned than heavily melanised males. Clinically, the most common presentation of penile and scrotal BCCs is pearly papule or nodule with surface telangiectasia but ulcerative, cicatricial, and superficial multicentric variants do occur.

Bowen's disease of the vulva

This is best regarded as an analogue of Erythroplasia of Queyrat[108]. It is etiologically related to previous HPV infection[109], and is characterized by intractable, severe itching. There are multiple lesions which are flat, red (or) pigmented, velvetty (or) granular plaques, with well demarcated hyperpigmented margins[110]. Anterior vulva and especially labia minora are the main sites involved. History of bleeding (or) a palpable mass suggests invasive changes.

Malignant Melanoma

Melanoma of the penis and vulva are rare and comprise about 1% and 4-10%[112] of all malignancies at these sites respectively. They present as a pigmented or amelanotic papule or nodule which may ulcerate or bleed. In male it is seen over the glans. Forty to fifty per cent of patients have lymphatic or metastatic dissemination.

Sarcomas

Sarcomas of the genitalia are extremely uncommon.

AIMS OF THE STUDY

1. To study the clinical profile of common non-venereal dermatological disorders involving the genitalia.
2. To study the age and sex relationship of the non-venereal genital dermatoses.
3. Clinical presentation of genital dermatoses and confirmation by relevant histopathological and microbiological tests.

MATERIALS AND METHODS

Materials

The study was conducted from September 2009 – October 2010. All new patients presenting to the Department of Dermatology, Chengalpattu Medical College Hospital, Chengalpattu, during this period were screened, and those found to have genital lesions were included in this study. A total of hundred and eight cases with different forms of genital lesions formed the subject of study.

All age groups and both sexes were included. A proforma was filled with demographic data, history, clinical features, provisional diagnosis, laboratory investigation and final diagnosis.

Methodology

A detailed history of presenting complaints was taken after which the patients were classified into one of the following groups.

i). Those who presented with lesion only on the genitals.

ii). Those who presented with generalised skin lesions but on examination were found to have genital lesion.

iii). Those who have history of exposure to the risk of sexually transmitted diseases, who had genital lesion and associated sexually transmitted diseases were excluded from the study.

Only groups (i) & (ii), which are not transmitted by sexual route formed the subject of study. Certain specific and relevant history like history of trauma, drug intake, topical irritant application, urethral symptoms, circumcision and history of recurrence were elicited from patients in relevant cases. Menstrual and parturition history were elicited in female patients.

Thorough examination of genital lesion was done with special relevance to the morphology, number, tenderness, regional lymph node involvement etc. Complete physical and systemic examination was done. Associated skin lesions were noted.

Investigations like complete haemogram, urine examination was done in all cases. Other tests like LFT, RFT, serum cholesterol, CXR, ECG were done in selected cases. Special tests like Gram's stain, Tzanck smear, urine culture and sensitivity, biopsy are tailored to the needs of individual cases. In suspected cases, VDRL, HIV test were done to rule out STD. The data obtained from the above studies were analysed and discussed here.

OBSERVATION

Age –sex distribution analysis is shown in

Table 1

Age	Male	Female	Total	Percentage
0-10	7	4	11	10.1
11-20	5	3	8	7.4
21-30	15	2	17	15.7
31-40	16	4	20	18.5
41-50	10	13	23	21.2
51-60	6	8	14	12.9
61-70	8	4	12	11.1
71-80	2	0	2	1.8

Total number of males - 69(63.88%)

Total number of females - 39(36.12%)

Total number of adults - 89(82.4%)

Total number of children - 9(17.5%)

Male-female ratio - 1.7:1

Peak incidence in age group - 41-50 years(21.2%)

Least incidence in age group > 70 years - (1.8%)

Sex distribution is shown in

Table 2

Sex	No.of patients	Percentage
Male	69	63.88%
Female	39	36.12%
Total	108	100%

108 patients with genital lesions were classified into four major groups and are shown in chart 1 and table 3.

1. General cutaneous diseases
2. Infections and infestations
3. Tumors
4. Miscellaneous

NON VENEREAL GENITAL LESIONS

Table 3

Diagnosis	No. Of patients	Percentage of the total
General cutaneous diseases	**Total No. Of patients = 53**	**49.07 %**
Vitiligo	24	22.22
Lichen sclerosus et atrophicus	9	8.3
Lichen planus	5	4.6
Lichen nitidus	3	2.7
Psoriasis	3	2.7
Bullous disorders	3	2.7
Plasma cell balanitis	2	1.8
Lichen simplex chronicus	2	1.8
Eczema	2	1.8

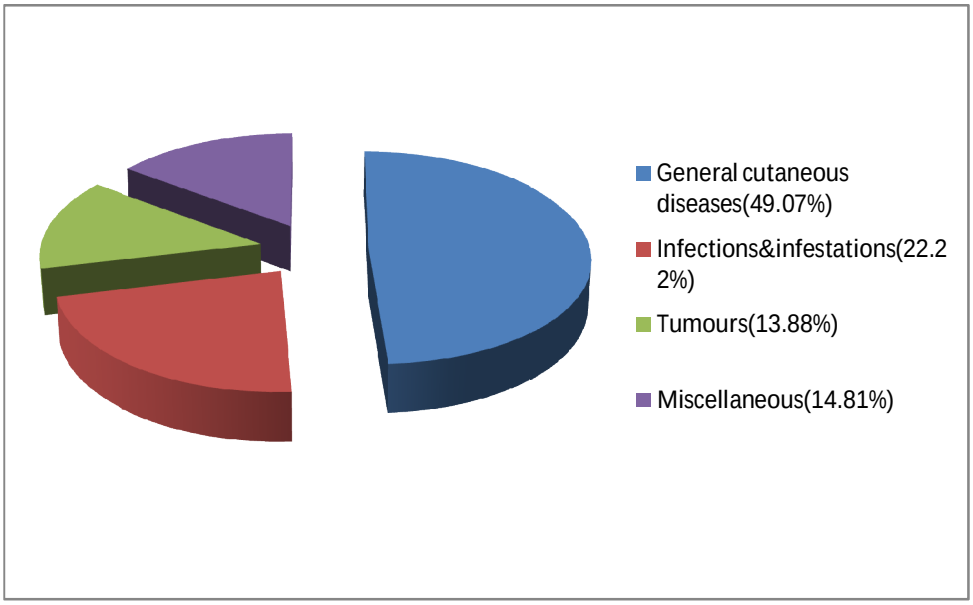
Infections & Infestations	**Total No. Of patients = 24**	**22.22 %**
Fungal	13	4.6
Bacterial	6	12.03
Parasitic	5	5.5

Tumours	**Total No. Of patients = 15**	**13.88 %**
Benign	10	11.1
Premalignant & Malignant	5	4.6

Miscellaneous	**Total No. Of patients = 16**	**14.81%**
Pearly penile papules	6	5.5
Fixed drug eruption	3	2.7
Angiokeratoma of Fordyce	3	2.7
Epidermal naevi	2	1.8
Paraphimosis	1	0.9
Fox Fordyce spots	1	0.9
Total	108	100 %

Distribution of diagnosis in non-venereal genital lesions

Chart 1



Distribution of diagnosis in adults and children are given in Table 4.

Diagnosis	Adults total No.& % 59 + 30 = 89		Children total No. & % 13 + 6 = 19		Total
	Male	Female	Male	Female	
Vitiligo	7 (11.86)	11 (36.66)	3 (23.07)	3 (50)	24
Lichen sclerosis et atrophicus	3 (5.08)	6 (20)	–	–	9
Lichen planus	3 (5.08)	2 (6.66)	–	–	5
Psoriasis	3 (5.08)	–	–	–	3
Pemphigus vulgaris	–	1 (3.33)	–	–	1
Pemphigus foliaceus	2 (3.39)	–	–	–	2
Scabies	2 (3.39)	–	2 (15.38)	1 (16.66)	5
Candidiasis	4 (6.78)	3 (10)	–	–	7
Tinea genitalis	2 (3.39)	1 (3.33)	3 (23.07)	–	6
Sebaceous cyst	3 (5.08)	–	–	–	3
Lichen nitidus	–	–	3 (23.07)	–	3

Eczema	2 (3.39)	_	_	_	2
Squamous cell carcinoma	3 (5.08)	_	_	_	3
Pearly penile papules	6 (10.16)	_	_	_	6
Lymphangioma	2 (3.39)	_	_	_	2
Haemangioma	_	_	1 (7.69)	1 (16.66)	2
Epidermal naevi	1 (1.69)	_	1 (7.69)	_	2
Neurofibroma	_	1 (3.33)	_	_	1
Paraphimosis	1 (1.69)	_	_	_	1
Fixed drug eruption	3 (5.08)	_	_	_	3
Fox Fordyce spots	1 (1.69)	_	_	_	1
Erythroplasia of Queyrat	2 (3.39)	_	_	_	1
Lichen simplex chronicus	_	2 (6.66)	_	_	1
Tuberculosis	_	2 (6.66)	_	_	2

Hansen's disease	1 (1.69)	–	–	–	1
Folliculitis	2 (3.39)	–	–	–	2
Vulvovaginitis	–	–	–	1 (16.66)	1
Angiokeratoma of Fordyce	3 (5.08)	–	–	–	3
Syringoma	–	1 (3.33)	–	–	1
Calcinosis cutis	1 (1.69)	–	–	–	1
Plasma cell balanitis	2 (3.39)	–	–	–	2
Total	59 (100)	30 (100)	13 (100)	6 (100)	108

Results about the frequency of each condition is analysed here.

VITILIGO: This condition formed the largest group in this study with twenty four patients (22.22%) Age- sex distribution is given in Table - 5.

Table 5

Age	Male	Female
0-10	2	3
11-20	1	2
21-30	1	-
31-40	3	1
41-50	-	5
51-60	-	2
61-70	2	2
71-80	-	-
Total	9	15

CLINICAL PRESENTATION

Table 6

Complaints	No . of Patients	Percentage
Skin & genitalia	6	25%
Genitalia only	18	75%

SITE OF LESION

Table 7

Site	No . of Patients	Percentage
Prepuce	9	100%
Glans penis	5	55.55%
Labia majora	10	66.66%
Labia minora & clitoris	15	100%

Fig 1: VITILIGENEOUS PATCH OVER FEMALE GENITALIA

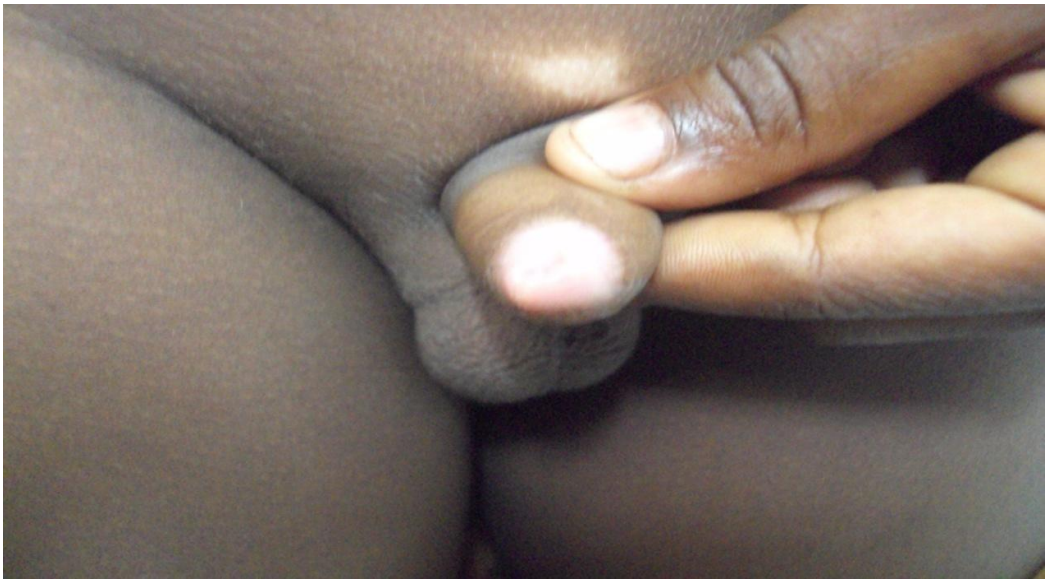


Fig 2 : VITILIGENEOUS PATCH OVER THE PREPUCE

Fig 3: CANDIDIASIS - FISSURES AND WHITISH PLAQUES OVER THE PREPUCE AND GLANS PENIS

Fig 4: CANDIDIASIS -WHITISH PLAQUES AND FISSURES

OVER THE LABIA MINORA

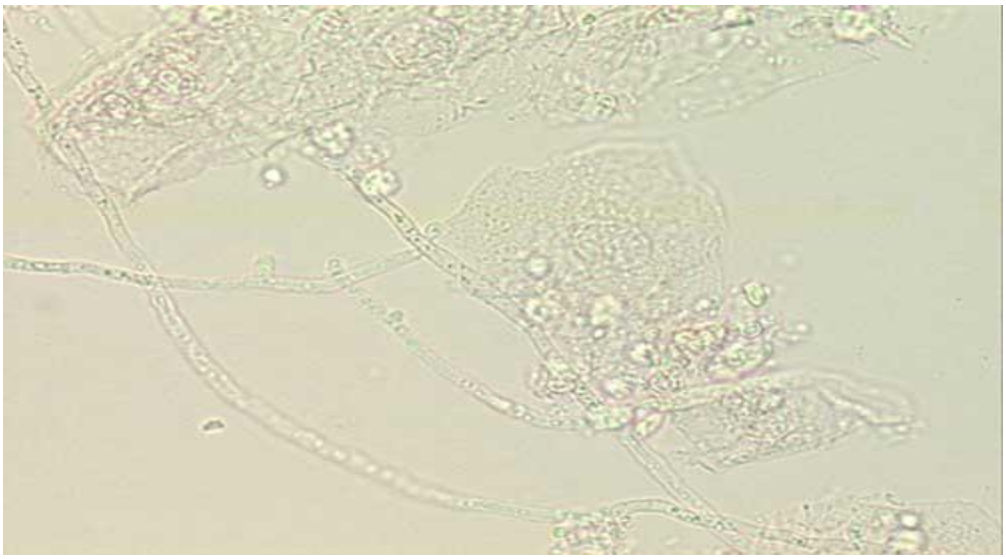


Fig 5: 10% POTASSIUM HYDROXIDE MOUNT SHOWING CANDIDAL HYPHAE

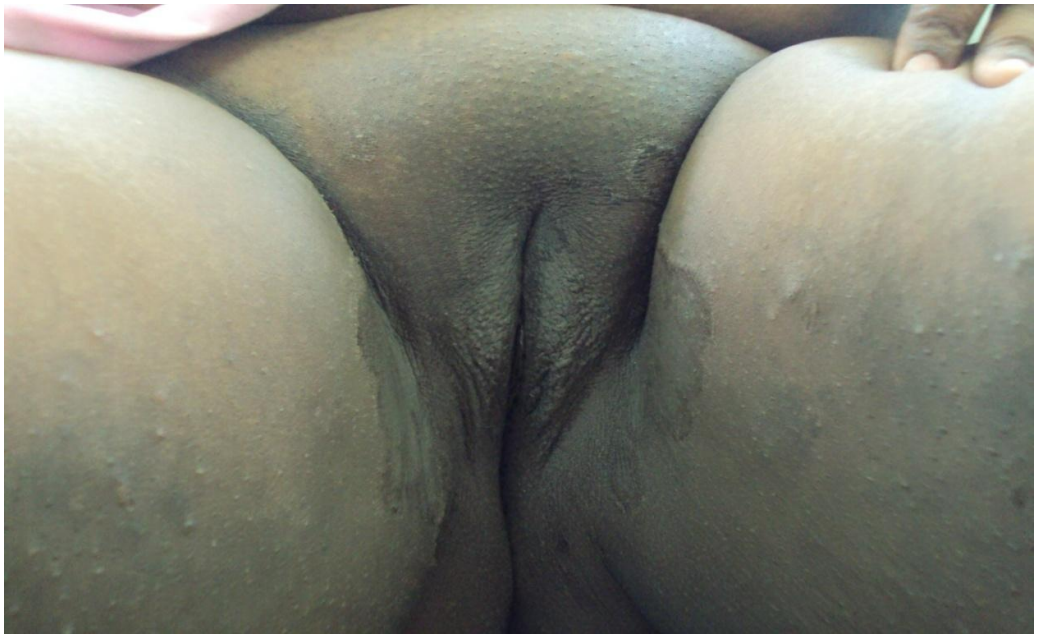


Fig 6 : TINEA GENITALIS – HYPERPIGMENTED SCALY PLAQUE WITH RAISED EDGES SEEN OVER MONS PUBIS, LABIA MAJORA AND CRURAL REGION

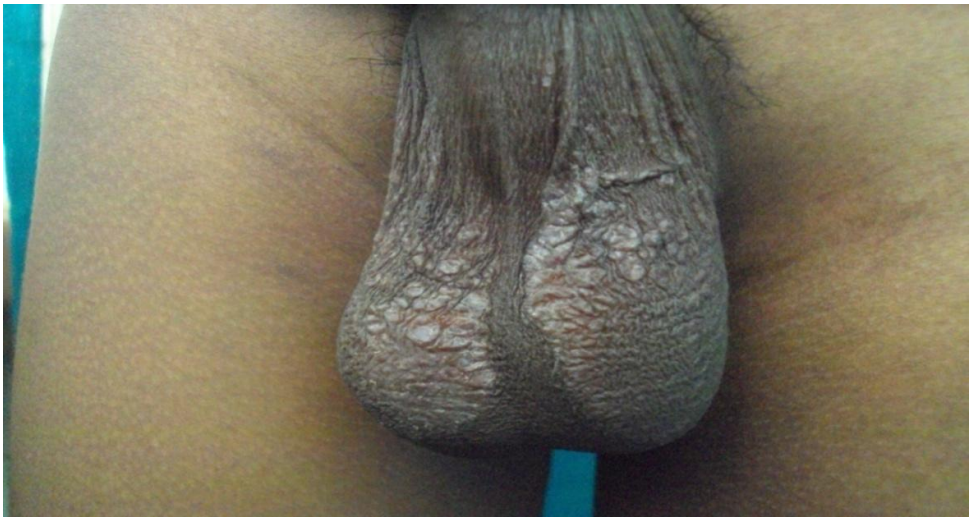


Fig 7: TINEA GENITALIS - WELL CIRCUMSCRIBED PLAQUE WITH PERIPHERAL RAISED EDGES AND CENTRAL CLEARING PRESENT OVER THE SCROTUM

Fig 8: LICHEN SCLEROSUS ET ATROPHICUS OVER THE VULVAL REGION WITH ATROPHY AND EROSIONS

Fig 9: LICHEN PLANUS -ANNULAR VIOLACEOUS PLAQUES OVER THE PENILE SHAFT, PREPUCE AND SCROTUM

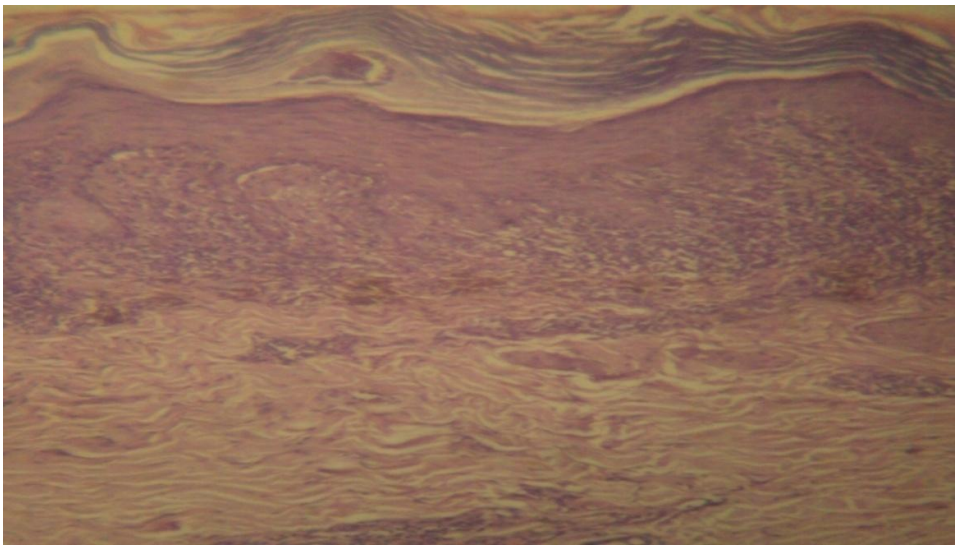


Fig 10 : H&E- LICHEN PLANUS - HYPERKERATOSIS, IRREGULAR ACANTHOSIS, BAND DENSE LYMPHOCYTIC INFILTRATE AND MELANIN INCONTINENCE

Fig 11 :LICHEN NITIDUS MULTIPLE DISCRETE, SHINY, ROUND,FLAT-TOPPED SKIN COLOURED PAPULES

Fig 12: PEMPHIGUS VULGARIS -

MULTIPLE EROSIONS AND FEW FLACCID BLISTERS WERE PRESENT OVER THE LABIA MAJORA AND LABIA MINORA

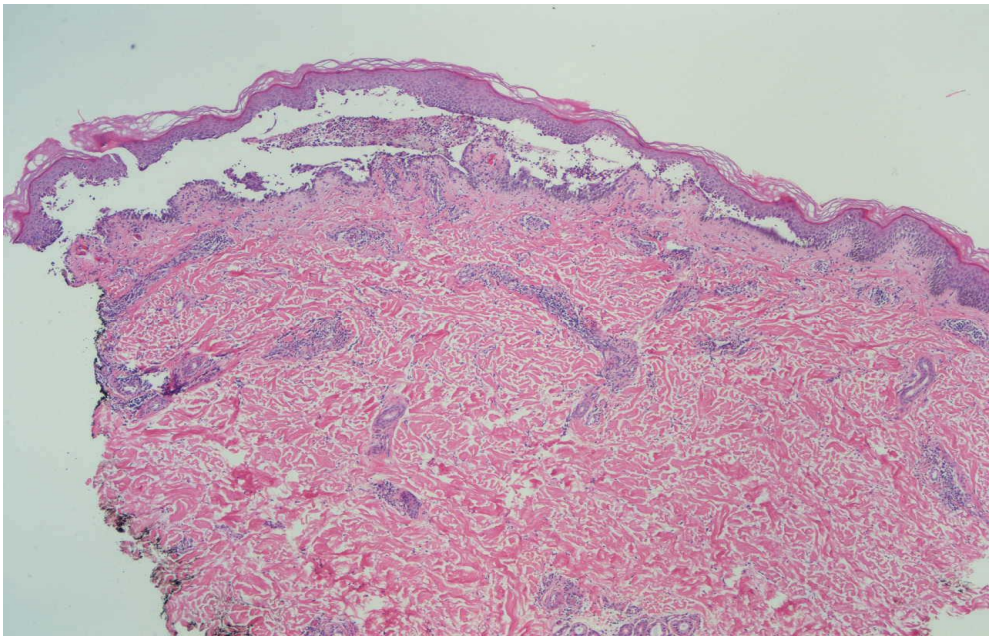


Fig 13 : H&E SECTION OF PEMPHIGUS VULGARIS -SHOWS SUPRABASAL BULLAE WITH ROW OF TOMB STONES APPEARANCE

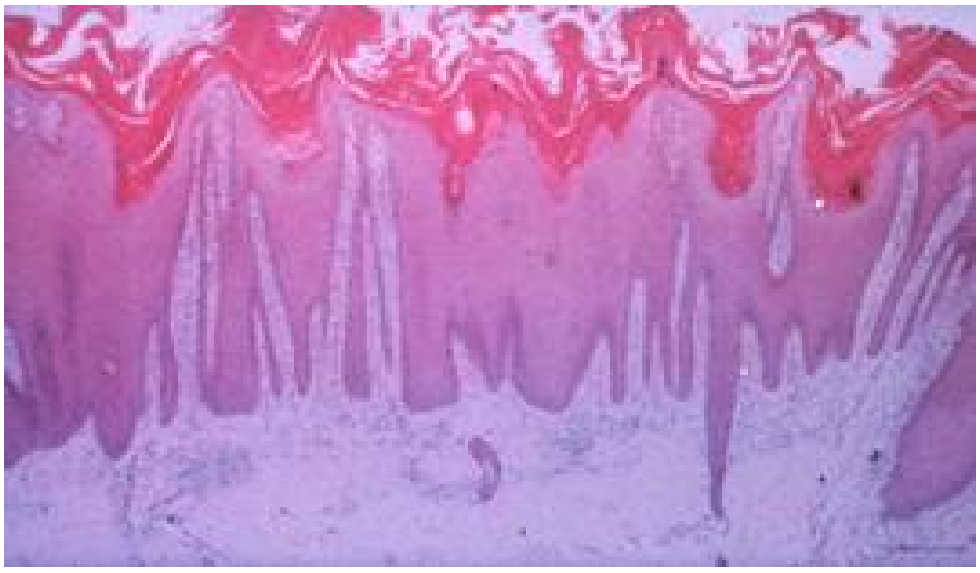


Fig 14 :H&E SECTION OF PSORIASIS – HYPERKERATOSIS, REGULAR ACANTHOSIS WITH SUPRAPAPILLARY THINNING

Fig 15 : PLASMA CELL BALANITIS -WELL DEFINED GLISTENING, MOIST, SHINY, PLAQUE OVER THE GLANS PENIS AND PREPUCE

Fig 16 :SCABETIC PAPULE,CRUSTING,EROSION OVER THE MALE GENITALIA

Fig 17 : HISTOID LEPROSY – MULTIPLE NODULES OVER THE SCROTUM

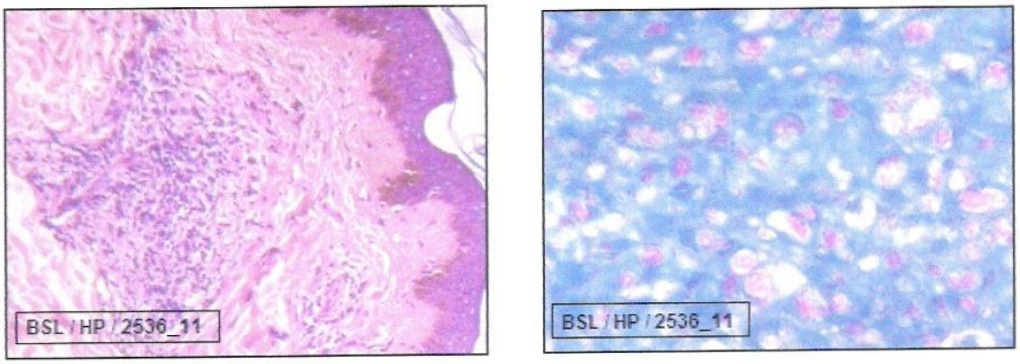


Fig 18: HISTOID LEPROSY - H&E SHOWING CLEAR UNNA BAND WITH GRANULOMA AND SPINDLE SHAPED HISTIOCYTES. WADE FITE STAIN SHOWING NUMEROUS LARGER BACILLI. (BACILLARY INDEX 5+)

Fig 19 : PEARLY PENILE PAPULES ARRANGED IN TWO ROWS AROUND THE CORONAL SULCUS

Fig 20 : BULLOUS FIXED DRUG ERUPTION OVER PREPUCE

Fig 21 : ANGIOKERATOMA OF FORDYCE - MULTIPLE BLUISH RED PAPULES OVER THE PENILE SHAFT AND SCROTUM

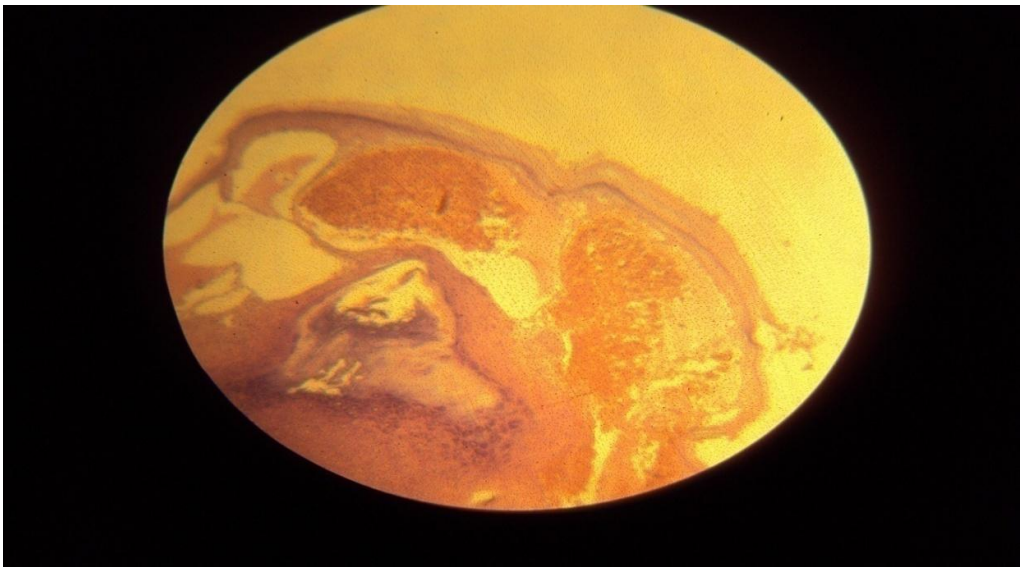


Fig 22: H & E SECTION IN ANGIOKERATOMA OF FORDYCE SHOWING NUMEROUS, DILATED, THIN WALLED, CONGESTED CAPILLARIES IN THE PAPPILARY DERMIS

Fig 23: FOX- FORDYCE SPOTS – MULTIPLE YELLOWISH PAPULES OVER THE PREPUCE

Fig 24 : LINEAR EPIDERMAL NAEVI OVER PREPUCE AND PENILE SHAFT

Fig 25: SQUAMOUS CELL CARCINOMA OF PENIS - CAULIFLOWER LIKE ULCERATIVE PLAQUES OVER THE PENILE SHAFT

Fig 26: SEBACEOUS CYST OF SCROTUM - MULTIPLE DISCRETE YELLOWISH WAXY PAPULES AND NODULES OVER THE SCROTUM

Fig 27 : LYMPHANGIOMA CIRCUMSCRIPTUM OF SCROTUM

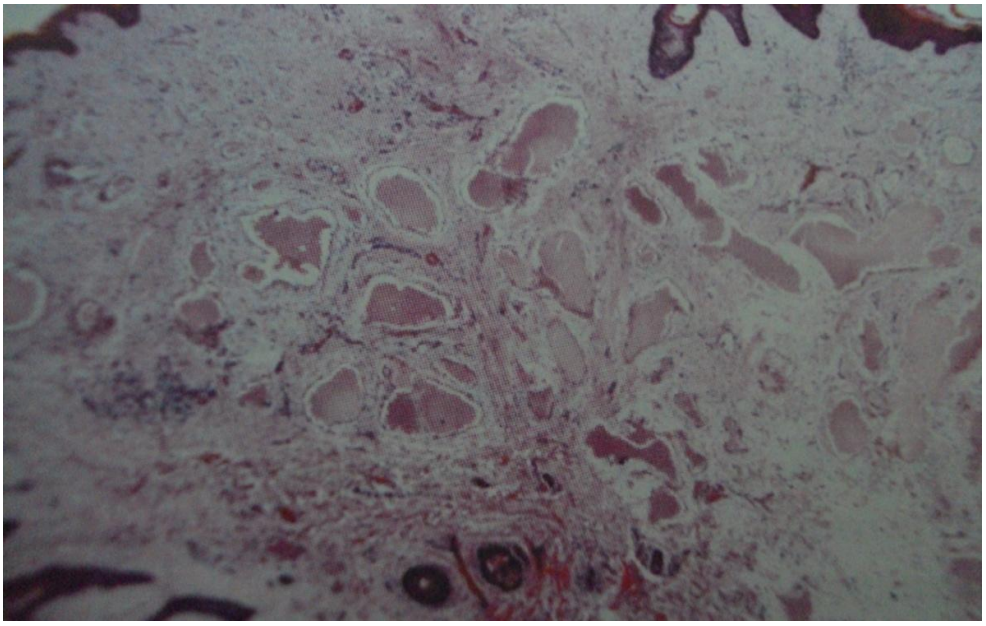


Fig 28: LYMPHANGIOMA CIRCUMSCRIPTUM- H&E SHOWING NUMEROUS DILATED LYMPHATIC SPACES IN THE PAPILLARY DERMIS

Fig 29:VULVAR SYRINGOMA – MULTIPLE HYPERPIGMENTED PAPULES OVER THE LABIA MAJORA WITH HAIRS EMERGING FROM FEW PAPULES

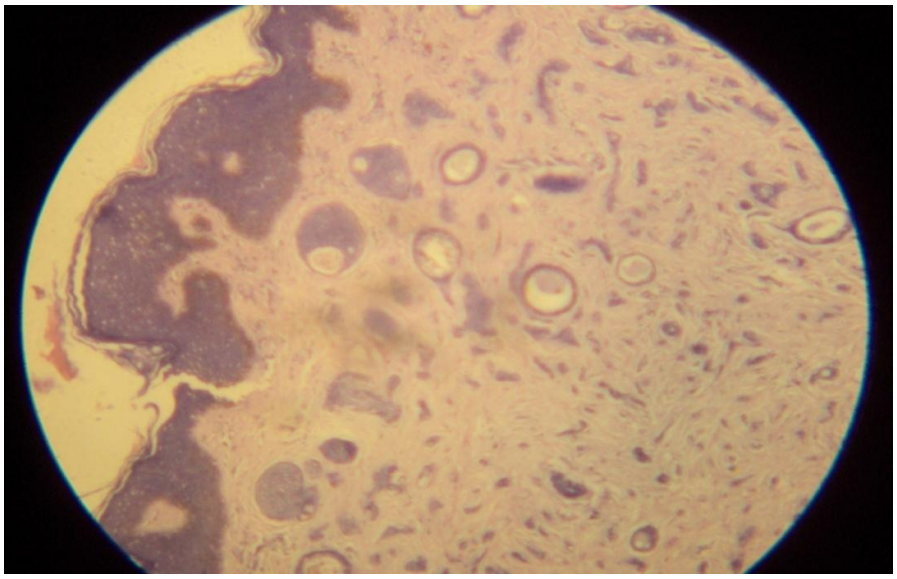


Fig 30 : H& E SECTION OF SYRINGOMA – NUMEROUS TUBULAR STRUCTURES, SOME DUCT POSSESS COMA LIKE TAIL –

TAD POLE APPEARANCE

Fig 31 :NEUROFIBROMA - MULTIPLE DISCRETE NODULES OVER THE MONS PUBIS AND LABIA MAJORA

FUNGAL INFECTIONS

Candidiasis and dermatophytic infections formed the 2nd largest group with 13(12.03%) patients. All the patients had itching as the predominant symptom.

AGE – SEX DISTRIBUTION

Table 8a

Age	Male	Female
0 – 10	1	-
11 - 20	2	1
21 - 30	1	1
31 - 40	2	1
41 - 50	1	2
51 - 60	-	-
61 - 70	1	-
71 - 80	-	-
Total	8	5

Table 8b

Dermatoses	No. Of patients	Percentage
Candidiasis	7	53.84%
Tinea genitalis	6	46.16%
Total	13	100%

CANDIDA INFECTION

Seven patients (53.84%) had candidial infection. All patients were symptomatic with itching and erythema or both. In males fissuring of the preuce and balanitis present. All the male patients had candidal balanoposthitis. Duration of symptoms ranges from 4 days to 5 months. Four patients had prior therapy. 10% KOH examination was done in all the patients which showed candidal hyphae, confirming the diagnosis.

CLINICAL PRESENTATION

Table 9

Morphology	No. of Patients	Percentage
Fissures	4	57.14%
Erythematous plaques	3	42.85%
Whitish plaques	3	42.85%

Table 10

Site	No. Of Patients	Percentage
Prepuce	4	57.14 %
Glans penis	3	42.85 %
Labia majora	3	42.85 %
Labia minora	3	42.85 %

TINEA INFECTIONS

Five male patients (46.15%) had Tinea genitalis with involvement of scrotum and penile shaft. One female patient had involvement of labia majora and mons pubis.10 % KOH examination was positive in these patients. Two patients had prior topical treatment.

Table 11

Site	No. Of Patients	Percentage
Penile shaft	4	66.66 %
Prepuce	2	33.33 %
Scrotum	5	83.33 %
Labia majora & mons pubis	1	16.66 %

LICHEN SCLEROSUS ET ATROPHICUS (LSA)

Genital LSA forms the 3rd largest group with 9 (8.3%) patients. Of this 6 (66.66%) were females and 3 (33.33%) were males. All patients presented with atrophic hypopigmented plaques. Two female and one male patient had diabetes mellitus. Three patients complained of burning micturition and itching.

All male patients had phimotic prepuce. No patient had skin lesions. Two patient had prior topical therapy. Biopsy was done in three female patients which was consistent with the diagnosis.

AGE – SEX DISTRIBUTION

Table 12

Age	Male	Female
0 – 10	-	-
11 – 20	-	-
21 – 30	-	-
31 – 40	-	-
41 – 50	2	2
51 – 60	1	2
61 – 70	-	2
71 – 80	-	-
Total	3	6

LICHEN PLANUS

Five patients (4.6 %) of which three are males (60%) and two are females (40 %). Patients were in the age group of 11 – 50 years. All patients had itching. Three had skin lesions also. Biopsy was done and was consistent with the diagnosis.

AGE – SEX DISTRIBUTION

Table 13

Age	Male	Female
0 – 10	-	-
11 – 20	-	1
21 – 30	2	-
31 – 40	1	-
41 – 50	-	1
51 – 60	-	-
61 – 70	-	-
71 – 80	-	-
Total	3	2

CLINICAL PRESENTATION

Table 14a

On examination	No. Of Patients	Percentage
Skin & Genital lesion	3	60%
Genital lesion	2	40%

Table 14b

Site	No. Of Patients	Percentage
Prepuce	2	66.66%
Penile shaft	1	33.33%
Glans penis	2	66.66%
Scrotum	1	33.33%
Labia majora	1	50%
Labia minora	2	100%

Table 14c

Morphology	No. Of Patients	Percentage
Papules	3	60%
Plaques	2	40%

PSORIASIS

Three patients(2.7 %) in the age group of 31 – 60 years presented with scaly plaques covered with silvery scales. Plaques were present over the penile shaft and scrotum. Two patients had skin lesions also. Biopsy was consistent with the diagnosis.

AGE – SEX DISTRIBUTION

Table 15

Age	Male	Female
0 -10	-	-
11 – 20	-	-
21 – 30	-	-
31 – 40	1	-
41 -50	-	-
51 – 60	2	-
61 – 70	-	-
71 – 80	-	-
Total	3	-

CLINICAL PRESENTATION

Table 16

Site	No of Patients	Percentage
Penile shaft	3	100%
Scrotum	3	100%

LICHEN NITIDUS

Three male child (2.7%) in the age group of 0-10 years presented with multiple shiny discrete skin coloured papules over the shaft of penis, which was totally asymptomatic of 1-2 months duration. One child had involvement of arms, and abdomen. Biopsy was done which confirmed the diagnosis

BULLOUS DISORDERS

Three patients (2.7 %) presented in the age group of 30 – 60 years. Two patients (66.66 %) were males with pemphigus foliaceus presented with crusty plaques and flaccid bullae over the sun exposed areas , penile shaft and scrotum.

One female (33.33 %) patient had pemphigus vulgaris presented with multiple flaccid bullae and erosions all over the body and labia majora. Nikolsky's sign was positive. One patient had itching. Tzanck smear was positive. Biopsy was consistent with the diagnosis.

PLASMA CELL BALANITIS

Two male patients (1.8 %) presented in the age group of 70 – 80 years with shiny red smooth plaque over the glans penis and prepuce. One patient had pain. Biopsy was consistent with the diagnosis.

LICHEN SIMPLEX CHRONICUS

Two female patients(1.8%) in the age group of 40 – 60 years presented with hyperpigmented lichenified plaques over the labia majora. Both had intense itching.

ECZEMA

Two male patients(1.8%) in the age group of 40 – 60 years presented with erythema and scaling over the scrotum. Both had intense itching. One had prior topical therapy.

SCABIES

Five patients (4.6%) in the age group of 0 -30 years presented with itchy papules and nodules. History of similar complaints was present in three patients(60 %). Symptoms lasted from 5 days to 1 month. In males penile shaft and scrotum were involved. In females labia majora was involved.

AGE – SEX DISTRIBUTION

Table 17

Age	Male	Female
0 – 10	2	-
11 – 20	1	1
21 – 30	1	-
31 – 40	-	-
41 – 50	-	-
51 – 60	-	-
61 – 70	-	-
71 – 80	-	-
Total	4	1

CLINICAL PRESENTATION

Table 18a

Complaints	No. Of patients	Percentage
Skin & genital lesion	5	100%
Genital lesion	2	40%

Table 18b

Site	No. of Patients	Percentage
Penile shaft	4	100%
Scrotum	2	50%
Labia majora	1	100%

Table 18c

Morphology	No. of Patients	Percentage
Papules	3	60%
Nodules	2	40%

BACTERIAL INFECTIONS

Six patients (5.5 %) in the age group 0 – 40 years presented with various bacterial infections. Two male patients (33.33 %) had folliculitis over the scrotum. Both of them had diabetes mellitus. Two female patients (33.33 %) had tuberculosis of genitalia, presented with edematous, sclerosed labia and plaques over the labia majora. ESR was raised. Biopsy was consistent with the diagnosis.

One male patient(16.66 %) presented with multiple succulent shiny papules and nodules over whole body, penile shaft and scrotum suggestive of Histoid hansen's. Biopsy was consistent with the diagnosis. One female child (16.66%) had streptococcal vulvovaginitis.

MISCELLANEOUS

This forms the next largest group with 16(14.81%) patients with normal variants like pearly penile papules, angiokeratoma of Fordyce, fixed drug eruption, epidermal naevi, Fox Fordyce disease and paraphimosis,

PEARLY PENILE PAPULES

Seen in six(5.5%) patients in the age group of 20-40 years. They had lesions on the coronal sulcus as row of pin point flesh coloured papules, which were totally asymptomatic

AGE – SEX DISTRIBUTION

Table 19

Age	No. of Patients
0 - 10	-
11 - 20	1
21 - 30	3
31 - 40	2
41 - 50	-
51 - 60	-
61 - 70	-
71 - 80	-
Total	6

ANGIOKERATOMA OF FORDYCE

Three patients(2.7%) in the age group 30 – 50 years presented with multiple bluish red papules over the scrotum in all three, scrotum and penile shaft in one patient. One patient had bleeding. One patient had pruritus. Biopsy was consistent with the diagnosis.

FIXED DRUG ERUPTION

Three male (2.7%) patients with age group ranging from 31-50 years presented with bullae, ulcer and erythematous patch over the glans penis & prepuce with exacerbation following ingestion of cotrimaxazole and diclofenac tablets. Two patients had associated oral and skin lesions.

EPIDERMAL NAEVI

Two male (14.28%) patients presented in the age group of 10 – 20 years with linear distribution of multiple verrucous plaques distributed along the Blaschko's lines. One patient had bilateral distribution involving whole body and the other patient had unilateral distribution . Both had the lesions after birth and was asymptomatic. Biopsy done was consistent with the diagnosis.

FOX FORDYCE SPOTS

One male patient (0.9%) in the age group of 20-30 years presented with multiple skin coloured follicular papules over the prepuce. He also had similar lesions over the lips of 6 months duration.

PARAPHIMOSIS

One male patient (0.9%) in the age group of 50-60 years presented with severe pain and oedema over the glans and prepuce of 2 days duration. Surgical reduction was done.

TUMOURS

Next form the largest group are the tumours with 15 (13.88%) patients**.** Sebaceous cyst and squamous cell carcinoma form the majority.

Table 20

Tumours	Male	Female	Total	Percentage
Squamous cell carcinoma	3	-	3	17.64 %
Sebaceous cyst	3	-	3	17.64 %
Lymphangioma	2	-	2	11.76 %
Erythroplasia of queyrat	2	-	2	11.76 %
Haemangioma	1	1	2	11.76 %
Calcinosis cutis	1	-	1	5.88 %
Neurofibroma	-	1	1	5.88 %
Syringoma	-	1	1	5.88 %
Total	14	3	17	100 %

SQUAMOUS CELL CARCINOMA

Three male (21.42 %) patients in the age group of 70–80 years presented with growth over the penile shaft. Two patients had bleeding and pain. One patient had cauliflower like growth which covered half of the penile shaft. Biopsy was done and it was consistent with the diagnosis.

SEBACEOUS CYST

Three male(21.42 %) patients presented in the age group of 21–50 years. All had multiple yellow coloured papules and nodules over the scrotum. One patient had secondary infection over the nodules. Biopsy was done and it was consistent with the diagnosis.

LYMPHANGIOMA CIRCUMSCRIPTUM

Two male (14.28 %) patients presented in the age group of 41–50 years. Both of them presented with multiple vesicles over the scrotum which was asymptomatic.

ERYTHROPLASIA OF QUEYRAT

Two male (14.28 %) patients presented in the age group of 50–60 years with shiny red plaques over the glans penis. Both of them had pain and was present for more than 6 months.

HAEMANGIOMA

One male(7.14%) and one female (33.33%)patient in the age group of 0–10 years with reddish plaques present over the penile shaft and vulva respectively. Female patient has recurrent bleeding from the lesion.

SYRINGOMA

One female(33.33%) patient in the age group of 30 – 40 years presented with multiple non itchy skin coloured papules some of them were hyperpigmented were present over the labia majora and mons pubis. She had

similar lesions over both infra orbital region. Biopsy was done and was consistent with the diagnosis.

CALCINOSIS CUTIS

One male (7.14%) patient in the age group of 40–50 years presented with asymptomatic multiple whitish papules, nodules and plaques.

NEUROFIBROMA

One female (33.33%) patient in the age group of 40 – 50 years presented with multiple nodules of varying sizes present all over the body including genitalia over labia majora and mons pubis. Cafe au lait macules were also present.

DISCUSSION

The present study was undertaken to identify various non venereal genital dermatoses in patients attending the dermatology out patient clinic during September 2009 to October 2010 in Chengalpattu Medical College Hospital. A total of one hundred and eight patients were found to have non – venereal genital dermatoses.

The common age group found to be affected were between 31-50 years (39.7%).In a previous study the common age group was 21-40years.Peak incidence in adults were between 41-50 years(21.2%) and least affected age group were adults more than 70 years (1.8 %).

Sex ratio was found to be 1.7:1 (M:F). Sex ratio in previous study was 4.4:1(M:F).

The common genital dermatoses in the order of frequency were general cutaneous diseases (49.07%), infections and infestations (22.22%), tumors (13.88%), and other conditions (14.81%). Previous study showed the following percentages,42.37%, 39.22%, 9.64% and 8.74% respectively. General cutaneous diseases (49.07%), miscellaneous(14.81%) and tumors (13.88%) show increased frequency of occurrence in the present study compared with the previous study(42.37%) ,(8.74%) and (9.64%)respectively.

VITILIGO

Genital vitiligo was the most common disorder accounting for twenty four patients (22.22%) similar to the results of previous studies. Female predominance was seen in the age group of 41 – 50 years.

Labia minora and clitoris (100%) and labia majora (66.66%) were the common sites of involvement.

FUNGAL INFECTIONS

Seven patients (53.84%) with candidal infection in the age group of 31-50 years, showed genital candidiasis, which include four male patients and three female patients. In males all the cases were balanoposthitis. Clinically, presented as fissures(57.14%) erythematous patch (42.85%) and whitish plaque (42.85%) most commonly over the prepuce (57.44%), glans penis(42.85%) in males,and labia majora and labia minora(42.85%) in females. 10% KOH was positive in seven cases (71.4%).

Six patients (46.15%) had Tinea genitalis with involvement of scrotum and shaft of penis in males, labia majora and mons pubis in females.10% KOH examination was positive in these patients.

SCABIES

Among the infections and infestations scabies was the second commonest condition. Five patients(4.6%) were found to have genital lesions with male predominance in the age group of 0 - 20 years. Three patients (60%) had extra-genital classical scabies lesions. Persistent pruritic nodules were seen in two (40%) patients. Shaft of the penis (100%) was the most commonly involved site.

TUMOURS

Three patients(17.64%) had sebaceous cysts and three (17.64%) had squamous cell carcinoma of penis form the majority, between the age group 31-50 and 61 – 80 years were reported respectively .All the patients with

sebaceous cyst (100%) had cysts over the scrotum. All patients (100%) presented with genital symptoms. One patient (33.33%) had secondary infection of the cysts. One patient(33.33%) with squamous cell carcinoma had cauliflower like growth over the penile shaft.

LICHEN SCLEROSUS ET ATROPHICUS

Nine patients (8.3%) presented with genital lichen sclerosus et atrophicus, in the age group of 41-70 years. In six (66.66%) female patients, labia majora(66.66%) and labia minora(100%) were found to be involved and in three male patients prepuce and glans (100%) were involved.

All patients presented with atrophic hypopigmented plaques with genital itching.

LICHEN PLANUS

Five patients (4.6%) had genital involvement of lichen planus with male predominance in the age group of 20-40 years. Three patients (60%) had associated skin lesions. Three patients (60%) presented with papules and two patients (40%) with plaques. Glans penis and prepuce (66.66%) were the most common sites involved in males and labia minora (100%) in females. All patients (100%) had genital itching.

PSORIASIS

Three male patients (2.7%) had genital involvement of psoriasis, in the age group of 31-60 years. Scaly plaques (100%), were the chief clinical presentation and scrotum and penile shaft (100%) were the most common sites involved. Two patients(66.66%) had associated skin lesions over the body.

BULLOUS DERMATOSES

Three male patients (2.7%) in the age group of 30-60 years had genital involvement of bullous dermatoses. One patient (33.33%) hadpemphigus vulgaris and two patients(66.66%) had pemphigus foliaceus.

Glans penis was the usual site of involvement and all patients had associated skin lesions.

PEARLY PENILE PAPULES

Seen in six(5.5%) patients in the age group of 20-40 years. They had lesions on the coronal sulcus as row or pin point flesh coloured papule.

ANGIOKERATOMA OF FORDYCE

Three patients(2.7%) in the age group 30 – 50 years presented with multiple bluish red papules over the scrotum in all three , scrotum and penile shaft in one patient.

FIXED DRUG ERUPTION

Three male (2.7%) patients with age group ranging from 31-50 years presented with bullae, ulcer and erythematous patch over the glans penis and prepuce . Two patients had associated skin and oral lesions.

EPIDERMAL NAEVI

Two male (1.8%) patients presented in the age group of 10 – 20 years with linear distribution of multiple verrucous plaques distributed along the Blaschko’s lines involving the body and genitalia.

CONCLUSION

1. The common non venereal genital dermatoses in males in the order of frequency were vitligo, fungal infections, pearly penile papules, scabies and tumors whereas in females were vitiligo and lichen sclerosis et atrophicans.
2. Other dermatoses were Lichen planus, Psoriasis, Bullous disorders, Lichen nitidus, Fixed drug eruption, Histoid Hansen, Epidermal naevi, Haemangioma, Lymphangioma circumscriptum, Angiokeratoma of Fordyce, Sebaceous cyst of scrotum, Streptococcal vulvovaginitis, Tuberculosis, Syringoma, Carcinoma of penis.
3. Sex ratio was found to be 1.7:1 (Male :Female). The sex ratio occurs almost equal due to increase health seeking behaviour among females.
4. Non venereal genital dermatoses were more common in males, seen in the age group of 41 - 50 years. The least affected group were between the age group of 11-20 years (7.4%) and older than 70 years (1.8%).
5. Most of the patients (85%) presented for their genital lesions.
6. The commonest sites of involvement in males were scrotum (50%) followed by prepuce(42%) and shaft of penis(36%). In females labia majora (93%) followed by labia minora (57%) were found to be the commonly involved sites.
7. 40% of patients with genital dermatoses had associated skin lesions of the same condition.
8. The non venereal genital dermatoses had classical morphology and histopathology in almost 90% of cases.
9. Hence the importance of knowing the classical morphology, the sites of predilection, sex distribution and histopathological features are essential for the diagnosis and management of non venereal genital dermatoses.

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PROFORMA

Name: **Address:**

Age: **Marital status:**

Sex: **Occupation:**

Case no.: **Hospital no.:**

Present complaints:

H/o present illness:

General examination:

1. Built **2. Height** **3. Weight**

4. Pallor **5. Vital signs: Temperature**

PR

BP

RR

6. Systemic examination:

CVS **RS** **ABD** **CNS**

7. Examination of Bones and Joints:

DERMATOLOGICAL EXAMINATION:

1. Site

2. Morphology of lesion

3. Extent of lesion

4. Associated skin lesions

5. Examination of Hair, Nails & Mucosa

6. Any specific diagnostic sign

For e.g. in case of pemphigus

1. Bulla spreading sign Positive/Negative
2. Nikolsky sign Positive/Negative

INVESTIGATIONS

1. Hb% TC DC ESR
2. Urine examination
3. Urine culture & sensitivity if needed
4. Liver function test
5. Renal function test
6. Tzanck smear
7. Biopsy
8. 10% KOH mount
9. Gram's stain
10. Pus culture & sensitivity
11. CXR, ECG

KEY TO MASTER CHART

1.Sex :

M –Male

F – Female

2. Presenting Complaints

S - Skin Lesion

Ge - Genital Symptoms

3.Precipitating Factors:(Ppt factors)

A - Absent

P – Present

4.Prior treatment:

A – Absent

P – Present

5.Genital morphology

P – Patch	Pl - Plaque	No - Nodule
Pa - Papule	Ve – Vesicle	Er- Erosion
Pu – Pustule	Ul – Ulcer	Cy - Cyst
F – Fissure	B – Bulla	Oz – Oozing
C – Crust	O - Others	

6. Genital sites

G - Glans Penis	Mp - Mons pubis
Pe - Prepuce	L - Labia majora
Sp - Shaft of penis	Lm - Labia minora
S – Scrotum	C - Clitoris
Cs - Coronal sulcus	V - Vestibule

7.Skin Lesions

A – Absent

P – Present

8.KOH mount

P – Positive

9.Skin biopsy

C - Consistent

10.Diagnosis

FDE - Fixed Drug Eruption

BXO - Balanitis Xerotica Obliterans

LSA - Lichen Sclerosus et Atrophicus

LSC – Lichen Simplex Chronicus.

S.No	Age	Sex	Presenting	Duration	Pptfactor	Prior Rx	Genital mo	Genital sit	Skin lesion	KOH	Gram stain	Biopsy	others	Diagnosis			
`	50	F	Ge	10yrs	A	P	P	L,Lm,C	A	-	-	-	-	Vitiligo			
2	60	F	Ge	2yrs	A	A	Pl	L,Lm	A	-	-	-	-	LSA			
3	45	F	Ge,S	2m	A	A	Pl,Pa	L,Lm	P	-	-	C	-	Lichen planus			
4	32	M	Ge	2m	A	P	Pl	S,Sp,G	A	-	-	C	-	Lichen planus			
5	60	M	Ge	3yrs	A	P	Pl	Pe,G	A	-	-	-	-	BXO			
6	27	M	Ge,S	5d	D	P	Bu,Er	Pe,G	P	-	-	-	-	FDE			
7	72	M	Ge	3yrs	A	A	Ul	Sp	A	-	-	C	-	Carcinoma penis			
8	40	M	Ge	15d	P	A	Pl,F	Pe,G	A	P	-	-	-	Candidal balanoposthitis			
9	15	M	Ge,S	15d	A	A	Pa	Sp,S	P	-	-	-	-	Scabies			
10	8	F	Ge	2yrs	A	P	P	Lm,C	A	-	-	-	-	Vitiligo			
11	48	M	Ge	1yr	A	A	No,Pa	S	A	-	-	-	-	Calcinosis cutis			
12	45	M	Ge	6m	A	A	Cy,Pa	S	A	-	-	-	-	Sebaceous cyst			
13	40	M	Ge	5yrs	A	P	P	Pe,G	A	-	-	-	-	Vitiligo			
14	60	F	Ge	3yrs	A	P	Pl	L,Lm	A	-	-	-	-	LSA			
15	37	F	Ge,S	5yrs	A	P	P	Lm,C	P	-	-	-	-	Vitiligo			
16	6	M	Ge,S	2m	A	A	Pa	Sp	P	-	-	C	-	Lichen nitidus			
17	27	M	Ge	1yr	A	A	Pa	Cs	A	-	-	-	-	Pearly penile papules			
18	15	M	Ge,S	1m	A	P	Pl,Pa	Sp,S	P	P	-	-	-	Tinea genitalis			
19	17	F	Ge	2m	A	A	Pa	L,Lm	A	-	-	C	-	Lichen planus			
20	55	F	Ge,S	1m	A	P	Pl	L,Lm	P	P	-	-	-	Tinea genitalis			
21	17	F	Ge,S	2m	A	A	Pl	L,Lm	A	-	-	C	-	Lichen planus			
22	60	M	Ge,S	6m	A	P	Pl	Sp,S,Pe	P	-	-	C	-	Psoriasis			
23	65	M	Ge,S	5m	A	A	Pl	G	A	-	-	-	-	Erythroplasia of Queyrat			
24	45	M	Ge	1yr	P	P	Pl	Pe,G	A	-	-	C	-	BXO			
25	60	F	Ge,S	5yrs	A	P	P	L,Lm,C	P	-	-	-	-	Vitiligo			
26	70	F	Ge	3yrs	A	P	Pl	L,Lm	A	-	-	-	-	LSA			
27	65	M	Ge,S	3yrs	P	P	P	L,Lm	P	-	-	-	-	Vitiligo			
28	70	F	Ge,S	4yrs	P	P	P	Lm,C	P	-	-	-	-	Vitiligo			
29	50	F	Ge	2yrs	P	A	P	Lm,C	P	-	-	-	-	Vitiligo			
30	5	F	Ge	3yrs	A	A	Pl	L	A	-	-	-	-	Vulval hemangioma			
31	6	M	Ge	1yr	A	A	Pl	Sp,S	A	-	-	-	-	Penile&scrotal hemangioma			
32	35	M	Ge,S	3d	P	P	E	G,Pe	S	-	-	-	-	FDE			
33	22	M	Ge	2yrs	A	A	Pl,Pa	S	A	-	-	-	-	Sebaceous cyst			
34	6	F	Ge	6m	A	P	P	Lm,C	A	-	-	-	-	Vitiligo			
35	37	F	Ge	2yrs	A	P	Pa,Pl	L	A	-	-	-	-	LSC vulva			
36	9	M	Ge,S	4m	A	A	Pa	Sp	P	-	-	C	-	Lichen nitidus			
37	69	M	Ge,S	10yrs	A	P	P	Pe,G	P	-	-	-	-	Vitiligo			
38	2	M	Ge	2m	A	P	Pa	Sp	A	-	-	-	-	Lichen nitidus			

39	70	M	Ge	1yr	P	P	Ul,Pl	Sp	A	-	-	C	-	Carcinoma penis		
40	36	M	Ge,S	2yrs	P	P	P	Pe,G	P	-	-	-	-	Vitiligo		
41	75	M	Ge	6m	P	P	Pl	G	A	-	-	C	-	Plasma cell balanitis		
42	70	M	Ge	8m	A	A	Pl	G	A	-	-	C	-	Plasma cell balanitis		
43	39	M	Ge	5yrs	A	A	Pa	Cs	A	-	-	-	-	Pearly penile papules		
44	45	M	Ge	2yrs	P	P	Pl	Pe,G	A	-	-	-	-	BXO		
45	26	M	Ge	4yrs	A	A	Pa	Cs	A	-	-	-	-	Pearly penile papules		
46	63	M	Ge	2yrs	P	P	Ul,Pl	Sp,Pe	A	-	-	C	-	Carcinoma penis		
47	25	M	Ge	2yrs	A	A	Pa	S	A	-	-	-	-	Sebaceous cyst		
48	36	M	Ge,S	5yrs	A	P	P	Pe,G	P	-	-	-	-	Vitiligo		
49	48	F	Ge	2yrs	A	P	Pl	Lm,C	A	-	-	-	-	LSA		
50	43	M	Ge,S	5yrs	A	P	P	Pe,G	A	-	-	-	-	Vitiligo		
51	28	M	Ge,S	2yrs	A	P	P	Pe,G	P	-	-	-	-	Vitiligo		
52	50	M	Ge	15d	A	P	O	Pe	A	-	-	-	-	Paraphimosis		
53	40	M	Ge	1m	P	P	F,E	Pe,G	A	P	P	-	-	Candidal balanoposthitis		
54	22	M	Ge,S	1m	P	A	Pa	Sp,S	P	-	-	-	-	Scabies		
55	30	M	Ge	5yrs	A	A	Pa	Cs	A	-	-	-	-	Pearly penile papules		
56	33	M	Ge	3yrs	A	P	P	Pe,G	A	-	-	-	-	Vitiligo		
57	45	M	Ge	5yrs	A	P	Pa	Sp,S	A	-	-	C	-	Angiokeratoma of fordyce		
58	25	F	Ge	5m	P	P	Pl	L,Lm	A	-	-	-	P	Genital tuberculosis		
59	70	F	Ge,S	10yrs	A	P	P	L,Lm,C	P	-	-	-	-	Vitiligo		
60	50	F	Ge	2yrs	P	P	F,E,Pl	Lm,C	A	P	-	-	-	Candidiasis		
61	50	M	Ge	5yrs	A	A	Ve	S	A	-	-	C	-	Lymphangioma circumscriptum		
62	65	F	Ge	2yrs	A	P	Pl,E	L,Lm	A	-	-	-	-	LSA		
63	15	F	Ge,s	1m	P	A	Pa,C	L	P	-	-	-	-	Scabies		
64	54	F	Ge,S	3yrs	A	P	P	L,Lm	P	-	-	-	-	Vitiligo		
65	28	M	Ge	2m	P	P	Pl	S,Sp	A	-	-	C	-	Lichen planus		
66	60	M	Ge,S	1yr	P	P	Pl	S,Sp	P	-	-	C	-	Psoriasis		
67	30	M	Ge	1w	P	A	Pa,Pu	Sp,S	A	-	-	-	-	Folliculitis		
68	28	M	Ge,S	2yrs	A	A	Pa	Sp,Pe	P	-	-	-	-	Fox Fordyce spots		
69	35	F	Ge,S	5yrs	A	A	Pa	L	P	-	-	C	-	Vulvar syringoma		
70	45	F	Ge	3yrs	A	P	P	L,Lm	A	-	-	-	-	Vitiligo		
71	48	F	Ge	2yrs	A	P	Pl	L,Lm	A	-	-	-	-	LSA		
72	48	F	Ge	4yrs	A	P	P	L,Lm	A	-	-	-	-	Vitiligo		
73	35	M	Ge	1yr	A	A	Pa	Cs	A	-	-	-	-	Pearly penile papules		
74	48	M	Ge	2m	P	P	F,E,Pl	Pe,G	A	C	-	-	-	Candidal balanoposthitis		
75	45	F	Ge	2yrs	A	P	Pl	L,Lm	A	-	-	-	-	LSA		
76	50	M	Ge	5yrs	A	A	Ve	S	A	-	-	C	-	Lymphangioma circumscriptum		

77	35	M	Ge	5yrs	A	P	Pa	Sp,S	A	-	-	-	-	Angiokeratoma of fordyce			
78	15	M	Ge	15d	P	A	Pl	Sp,S	A	P	-	-	-	Tinea genitalis			
79	28	M	Ge	1w	P	A	Pa,Pu	Sp,S	A	-	-	-	-	Folliculitis			
80	40	M	Ge,S	1yr	P	P	Pl	S,Sp	P	-	-	C	-	Psoriasis			
81	25	F	Ge	4m	P	P	Pl	L,Lm	A	-	-	-	P	Genital tuberculosis			
82	29	M	Ge	2yrs	A	A	Pa	Cs	A	-	-	-	-	Pearly penile papules			
83	52	F	Ge	3yrs	A	P	P	L,Lm	A	-	-	-	-	Vitiligo			
84	8	M	Ge,S	15d	P	A	Pa,C	L	P	-	-	-	-	Scabies			
85	52	F	Ge	3yrs	A	P	Pl	G	A	-	-	C	-	Erythroplasia of Queyrat			
86	8	M	Ge,S	1w	P	A	Pa,C	L	P	-	-	-	-	Scabies			
87	10	M	Ge	15d	P	A	Pl	Sp,S	A	P	-	-	-	Tinea genitalis			
88	25	M	Ge	14d	P	A	Pl	Sp,S	A	P	-	-	-	Tinea genitalis			
89	42	F	Ge	6m	A	P	Pl	L	A	-	-	-	-	LSC vulva			
90	54	M	Ge,S	1w	P	A	B,E	Pe,G	P	-	-	-	-	FDE			
91	55	M	Ge	3yrs	A	P	P	Pe,G	A	-	-	-	-	Vitiligo			
92	70	M	Ge	1m	P	P	F,E,Pl	Pe,G	A	P	-	-	-	Candidal balanoposthitis			
93	32	M	Ge	4yrs	A	P	Pa	Sp,S	A	-	-	C	-	Angiokeratoma of fordyce			
94	50	M	Ge,S	1m	A	A	C,E	S,Sp	P	-	-	C	-	Pemphigus foliaceus			
95	35	F	Ge,S	1m	P	A	B,E	L	P	-	-	C	-	pemphigus vulgaris			
96	53	M	Ge,S	2m	A	A	C,E	s,Sp	A	-	-	C	-	Pemphigus foliaceus			
97	14	F	Ge	6m	A	P	P	L,Lm,C	A	-	-	-	-	Vitiligo			
98	47	F	Ge,S	30yrs	A	P	N	L,Mp	P	-	-	-	-	Neurofibroma			
99	15	M	Ge	6m	A	P	P	s,Sp	A	-	-	-	-	Vitiligo			
100	8	F	Ge	1w	A	A	E,Pl	Lm,C	A	-	-	-	-	Streptococcal vulvovaginitis			
101	5	M	Ge	3m	A	P	P	Pe,G	A	-	-	-	-	Vitiligo			
102	22	M	Ge,S	20yrs	A	P	Pa,Pl	Sp,Pe,S	P	-	-	C	-	Epidermal nevi			
103	11	M	Ge,S	8yrs	A	P	Pa,Pl	Sp	P	-	-	C	-	Epidermal nevi			
104	32	M	Ge,S	1yr	A	P	Pa,N	S	P	-	-	C	P	Histoid Hansen			
105	52	M	Ge	1m	P	P	E,Pl,Oz	S	A	-	-	-	-	Eczema			
106	40	M	Ge	1m	P	P	E,Pl,Oz	S	A	-	-	-	-	Eczema			
107	15	F	Ge,S	1m	P	P	Pl	L	P	P	-	-	-	Tinea genitalis			
108	20	F	Ge	6m	A	P	P	L,Lm,C	A	-	-	-	-	Vitiligo			